

H E A D S
OF A
COURSE OF LECTURES
IN
NATURAL HISTORY,

READ AT THE
BOTANIC GARDEN,

By THOMAS MARTYN, B.D.
PROFESSOR OF BOTANY IN THE UNIVERSITY
OF CAMBRIDGE.

C A M B R I D G E,

Printed by *J. Archdeacon* Printer to the UNIVERSITY;

For J. & J. Merrill, in Cambridge.

MDCCLXXXII.

21

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In A.D. 1811

MDCCLXXXII

THE UNIVERSITY OF CAMBRIDGE

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D.D. Master of John College, and Vice-
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The Right Reverend Lord Bishop
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College,

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D. D. Master of St. John's College;

AND

RUSSEL PLUMPTRE, M. D. Regius
Professor of Physic:

Inspectors and Governors of the Botanic
Garden.

The following Heads of a Course of
Lectures, read under their Auspices, are
with all humility inscribed,

By their most obedient

humble servant,

THOMAS MARTYN
of King's

The Reverend JOHN CHEVALIER,
D. D. Master of St. John's College,

AND
RUFUS HUNTER, M. D. Regius
Professor of Physics

Inspectors and Governors of the Botanic
Garden

The

ADVERTISEMENT.

FOR reasons founded on mature consideration, and confirmed by twenty years experience, I follow the System of Linnæus, in the Animals and Vegetables; and that of Wallerius in the Fossils. At the same time adopting the improvements of some other Writers, particularly of Mr. Pennant in the Quadrupeds and Birds.

Six or seven weeks, the time allotted for going through this Course of Lectures, will allow me to take no more than a general and hasty view of Nature. By prolonging the time, or abridging the matter, I might become more particular and satisfactory: but as such a change would probably be attended with inconveniences overbalancing the advantages, I abide by the plan which I have hitherto pursued.

ADVERTISEMENT

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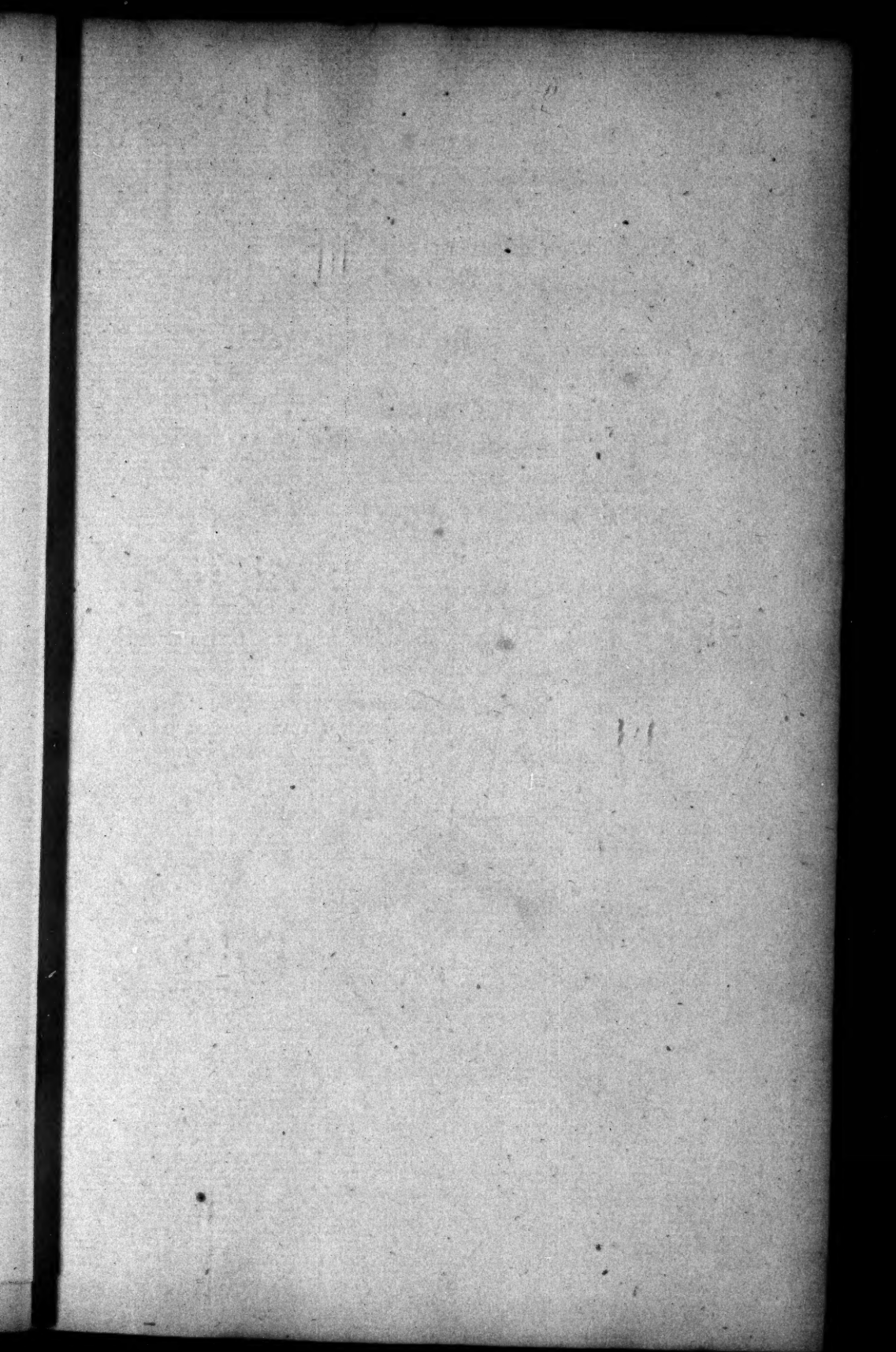
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H E A D S
OF A
COURSE OF LECTURES
IN
NATURAL HISTORY.

ANIMALS.

- I. II. **M**ammalia, Beasts, or Quadrupeds.
III. IV. V. Birds.
VI. Amphibia.
VII. Fishes.
VIII. IX. X. Insects.
XI. XII. Vermes.

VEGE-



P A R T I. (1)

THE ANIMAL KINGDOM.

L E C T U R E I.

INTRODUCTION.

MAN.

I. MAMMALIA, BEASTS or QUADRUPEDS. (2)

ORDER I. PRIMATES. Ape.

II. BRUTA. Armadillo.

III. FERÆ. 1. Dog and Fox.

2. Cat.

3. Bear & Raccoon;

4. Badger.

5. Otter.

6. Weefel.

7. Stoat.

8. Mole.

9. Hedgehog.

(1) For Natural History in general; take *Linnaei Systema Naturæ*, in three volumes 8vo, edition the 12th, *Holmiæ*, 1766: or that since printed from it.

(2) For this class of animals, take 1. *Elements of Natural History*. 2. *Pennant's History of Quadrupeds*, 2 volumes 4to, 1781. — And consult *Buffon*, &c. as in the list prefixed to the Elements.

LECTURE II.

MAMMALIA continued.

ORDER IV. GLIRES. 1. Hare.

2. Rabbit.

3. Marmot.

4. Rat.

5. Mouse.

6. Squirrel.

V. PECORA. 1. Ibex.

2. Chamois:

3. Sheep.

VI. BELLUÆ. 1. Horse.

2. Hog.

VII. PINNATA. 1. Seal.

VIII. CETE. 1. Whale.

IX. ALATA. 1. Bat.

LECTURE III.

II. BIRDS. (¹)

DIVISION I. LAND-FOWL.

ORDER I. RAPACIOUS. *Accipitres* Lin.

Genus.

Species.

1. Vulture.

Condor.

2. { Eagle.

Osprey.

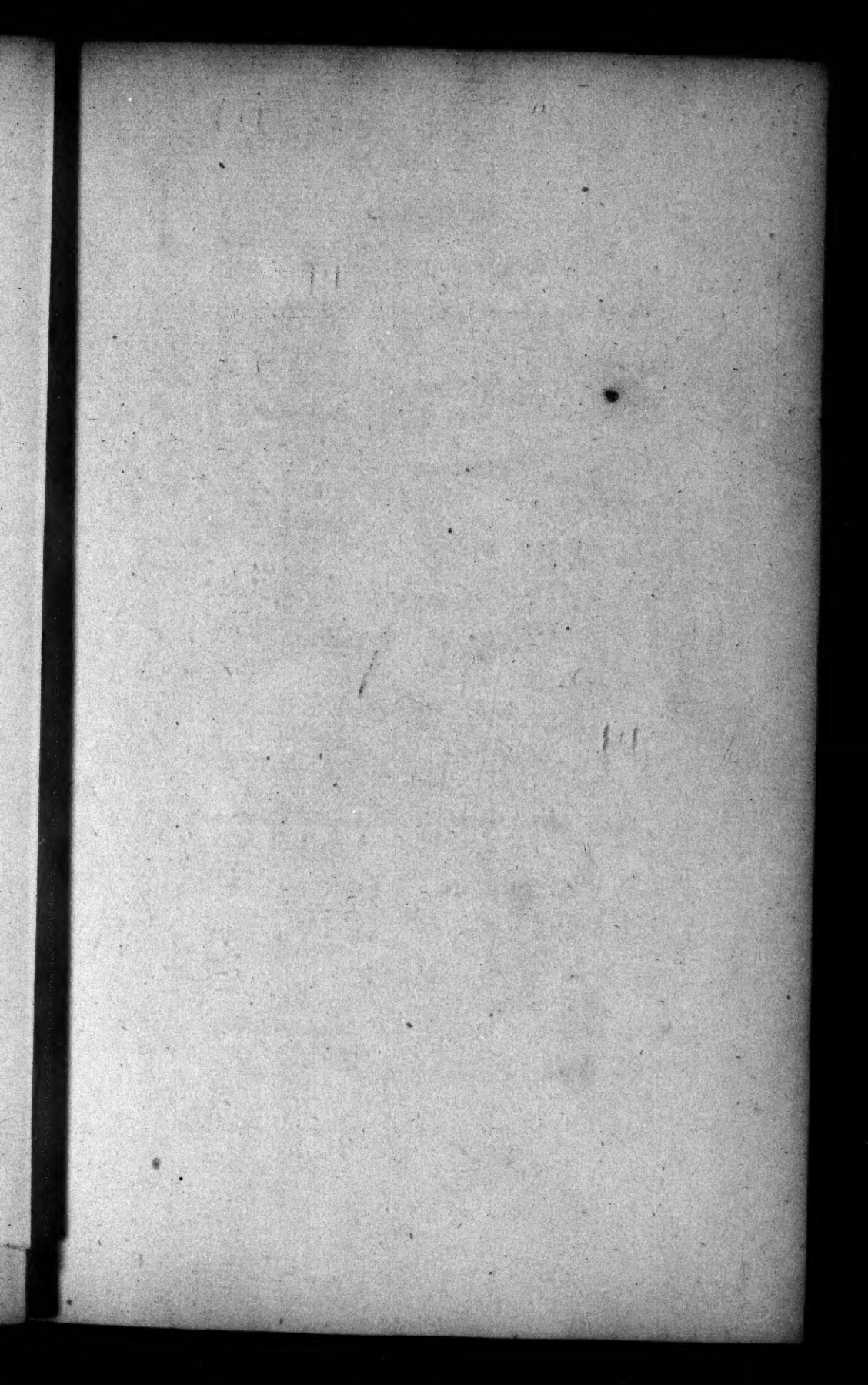
{ Falcon.

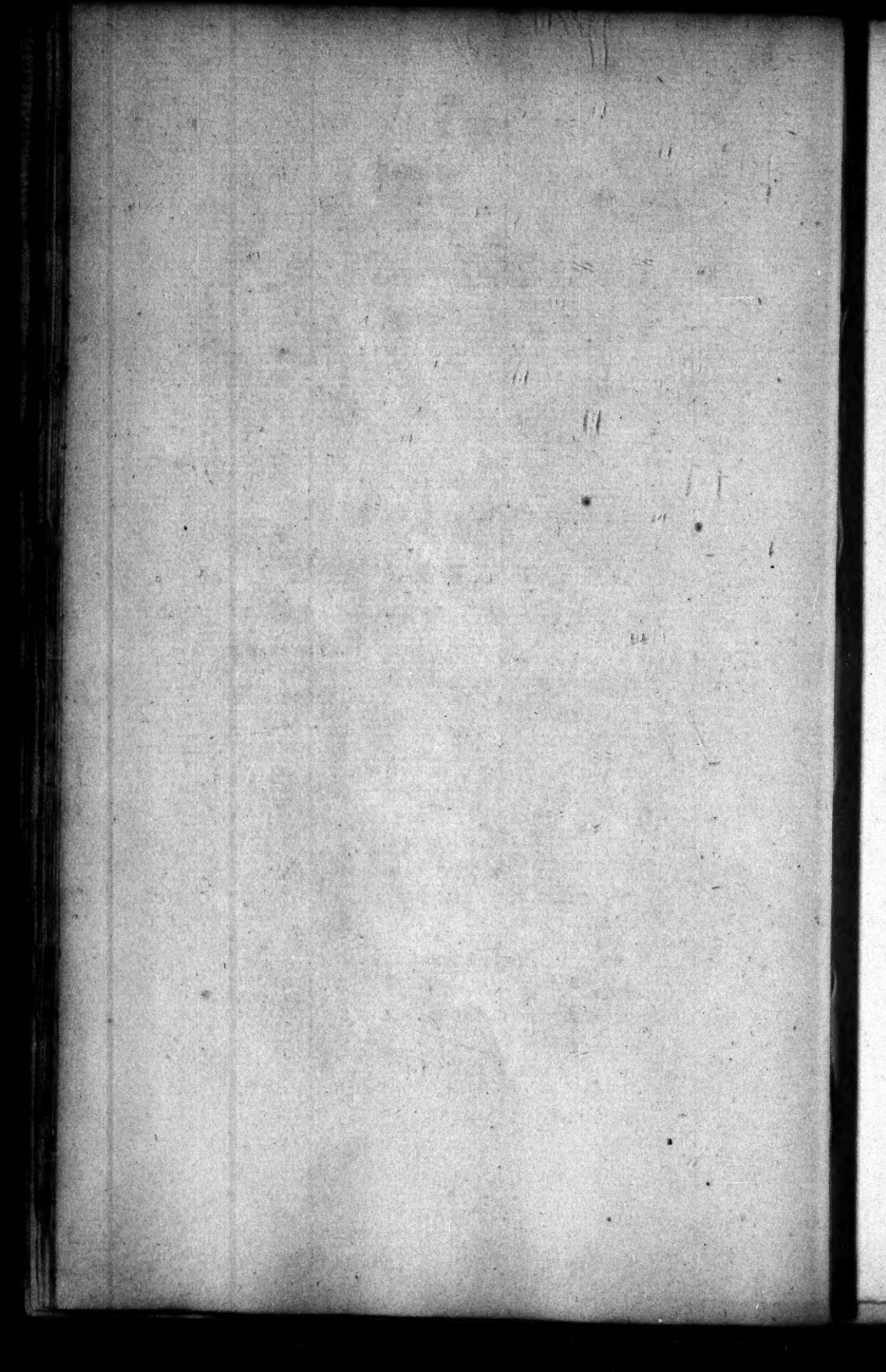
Moor Buzzard.

Sparrow-Hawk.

(¹) *Pennant's Genera of Birds.* London, 1781, 4to.*Latham's General Synopsis of Birds.* London, 1781, 4to.Consult *Willughby*, *Briffon*, *Buffon*: and for figures, *Albin*, *Catsby*, *Frisch*, and especially *Edwards*.

3. Owl.





3. Owl. White.
 Tawny.
 Long-eared.

ORDER II. PIES. *Pica Lin.*

Genus. Species.

1. Toucan of Cayenne.
2. Jay.
3. Paradise.
4. Woodpecker, Green.
5. King's-fisher.
6. Hoopoe.
7. Honeyfucker.

LECTURE IV.

LAND-FOWL *continued.*

ORDER III. GALLINACIOUS. *Gallinae Lin.*

1. Cock.
2. Curaffo.
3. Peacock.
4. Pheasant.
5. Grouse.
6. Partridge.

ORDER IV. COLUMBINE.

1. Pigeon.

ORDER V. PASSERINE. *Passeres Lin.*

Genus. Species.

1. Stare or Starling.
2. Thrush. Ring Ouzel.
 B 2 Grosbeak

3. Grosbeak.
4. Cross-bill.
5. Bull-Finch.
6. Wheedah Bird.
7. Blue Finch.
8. Gold-Finch.
9. Canary.
10. Linnet.
11. Wren, Golden-crested.
12. Titmouse, Blue.
13. Swallow, Swift.
14. Goatsucker.

ORDER VI. STRUTHIOUS.

LECTURE IV.

DIVISION II. WATER-FOWL.

ORDER VII. CLOVEN-FOOTED or WADERS.

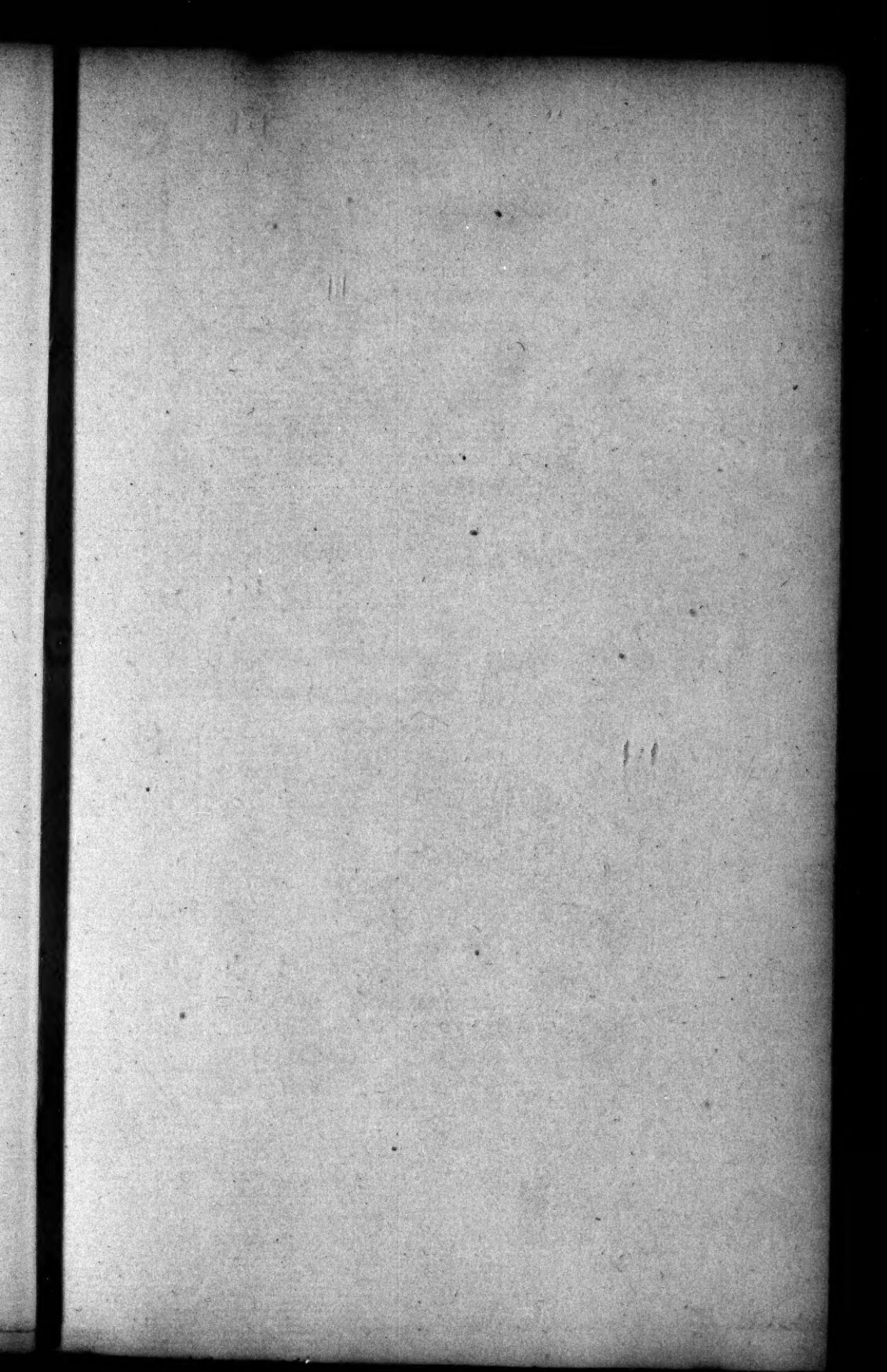
Grallæ Lin.

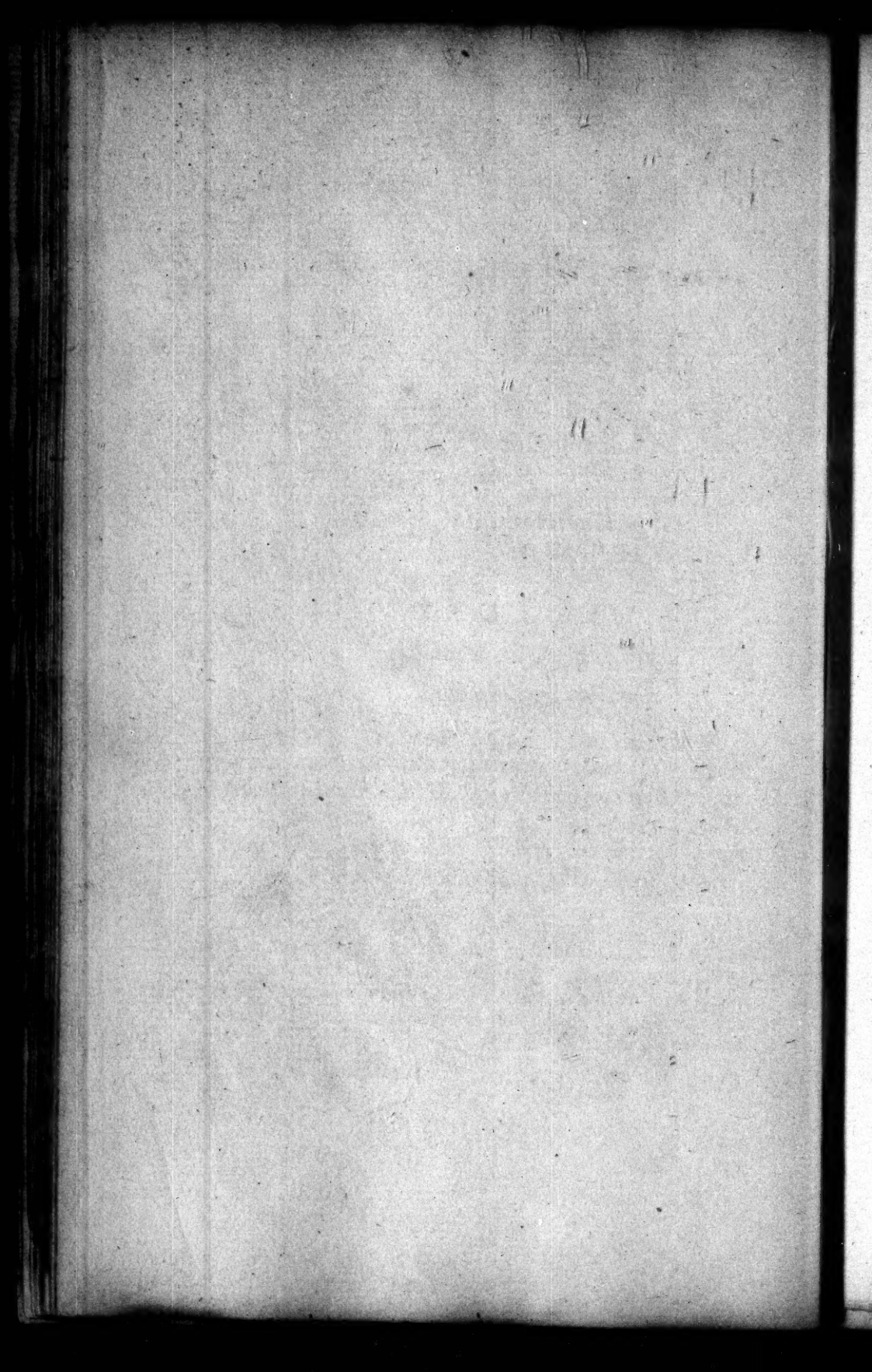
Genus.

Species.

1. Spoon-bill.
2. Heron.
3. Stork.
4. Bittern.
5. Curlew.
6. Ruff.
7. Lapwing.
8. Plover.
9. Oyster-catcher.
10. Rail, Water.
11. Gallinule, Common.
Purple.

ORDER





ORDER VIII. LOBE-FOOTED.

1. Grebe.

ORDER IX. WEB-FOOTED. *Anseres Lin.*

1. Albatross.
2. Puffin.
3. Guillemot.
4. Diver.
5. Gull.
6. Swan.
7. Duck.
8. Pinguin.
9. Corvorant.
10. Gannet.

LECTURE VI.

III. AMPHIBIA. (1)

Classical Character.

Heart has one auricle and one ventricle. *Blood* cold, red; circulation flow; no perspiration. *Breathing* arbitrary, by the mouth or by holes on the side of the neck. *Penis* double. *Eggs* membranaceous. *Skin* naked; colours lurid; smell disagreeable. *Voice* hoarse. *Car-*

(1) No professed Systematic Writers on this Class, except *Linnaeus*: — and, for the British species, *Pennant* in his *British Zoology*, Vol. III. This Work in four volumes 8vo, 1776 and 1777, will be consulted, for all the animals of these kingdoms. — For figures of this Class, see *Seba*, *Catesby*, and *Rössel*.

tilages

tilages instead of bones. — Quality poisonous. —
Elements air and water.

ORDERS III.

I. *Reptiles.*

Four legs. Breathe through the mouth.
Ears flat, naked, not external.

II. *Serpents.*

No legs or feet. Breathe through the
mouth. No organ of hearing. No limbs.
Poison by their bite.

III. *Nantes, or Cartilaginous Fish. (1)*

Fins. Breathe through holes. No covers
to the gills.

ORDER I. REPTILES.

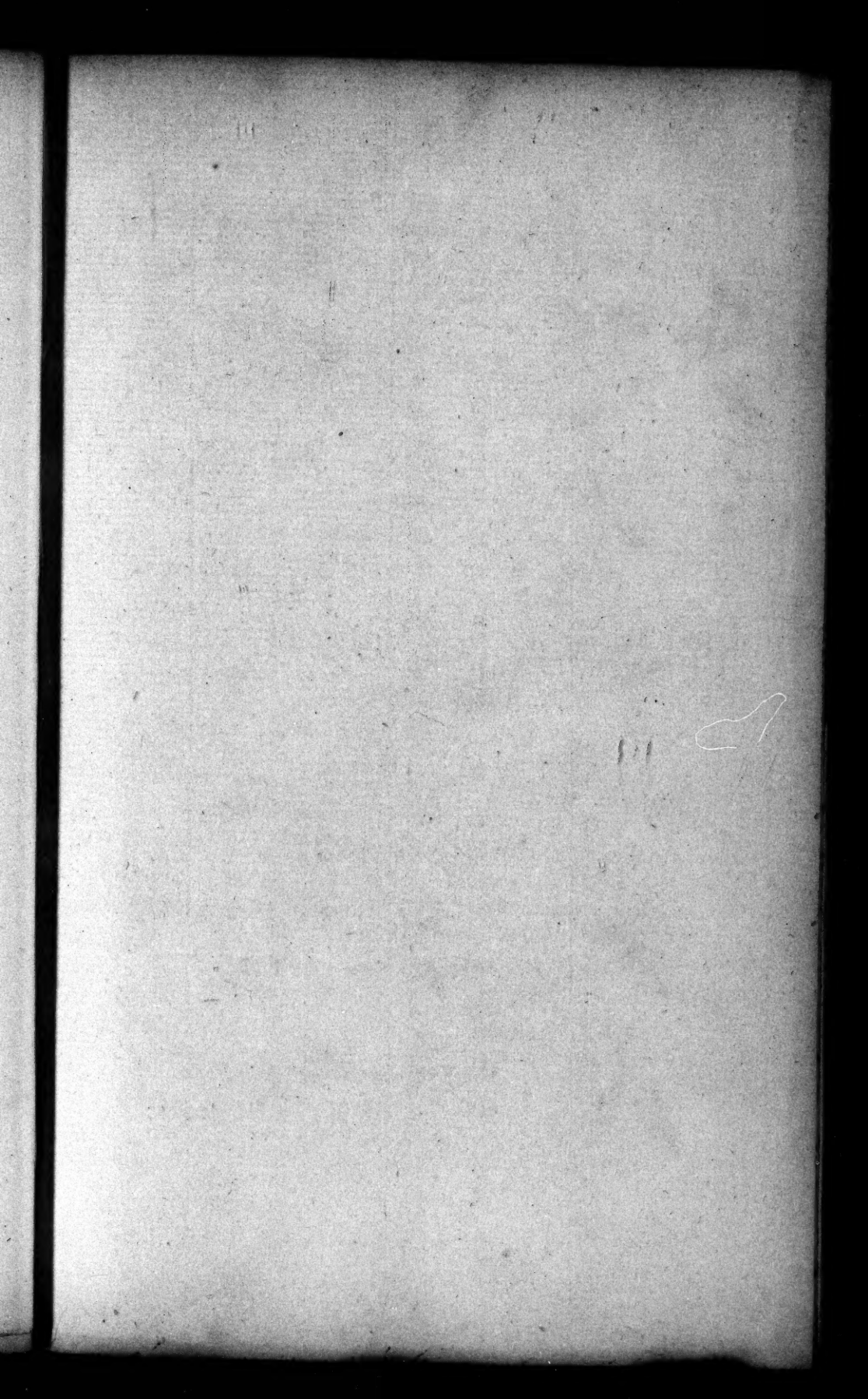
<i>Genus.</i>	<i>Species.</i>
1. Tortoise,	Sea. Land.
2. Frog.	
3. Lacerta.	Crocodile. Chamæleon. Skink. Iguana. Lizard. Eft or Newt.

ORDER II. SERPENTS.

1. Viper.
2. Snake.

(1) This order forms the connecting link between this
Class and the next.

3. Hooded



3. Hooded Snake.
4. Rattle Snake.
5. Blind Worm.

ORDER III. NANTES, or CARTILAGINOUS FISH.

Genus.

Species.

1. Lamprey.
2. Torpedo.
3. Skate or Flaire.
4. Squalus.
5. Toad-fish.
6. Sea Porcupine.
7. Needle-fish.
8. Sea-horse.

1. Balance.
2. Nurse.
3. Shark.
4. Saw-fish.

LECTURE VII.

IV. FISHES. (1)

Classical Character.

Heart has one auricle and one ventricle.
Blood cold, red. *Breathing* through gills, covered with bony plates. No external parts of generation. *Eggs* without any white. *Body* covered with scales. *Fins*, and a finny tail.
Element the water.

(1) *Artedi Ichthyologia*. Lugdb. 1738, 8vo. *Raii Synopsis Methodica Avium et Piscium*. Lond. 1713, 8vo.—
 And *Francisci Willughby, Historia Piscium*. Lond. 1686, folio.

ORDERS

ORDERS IV.

- I. *Apodal.* No ventral fins.
- II. *Jugular.* Ventral fins before the pectoral.
- III. *Thoracic.* Ventral fins under the pectoral.
- IV. *Abdominal.* Ventral fins behind the pectoral.

ORDER I. APODAL.

- 1. Eel.
- 2. Wolf-fish.
- 3. Sword-fish.

ORDER II. JUGULAR.

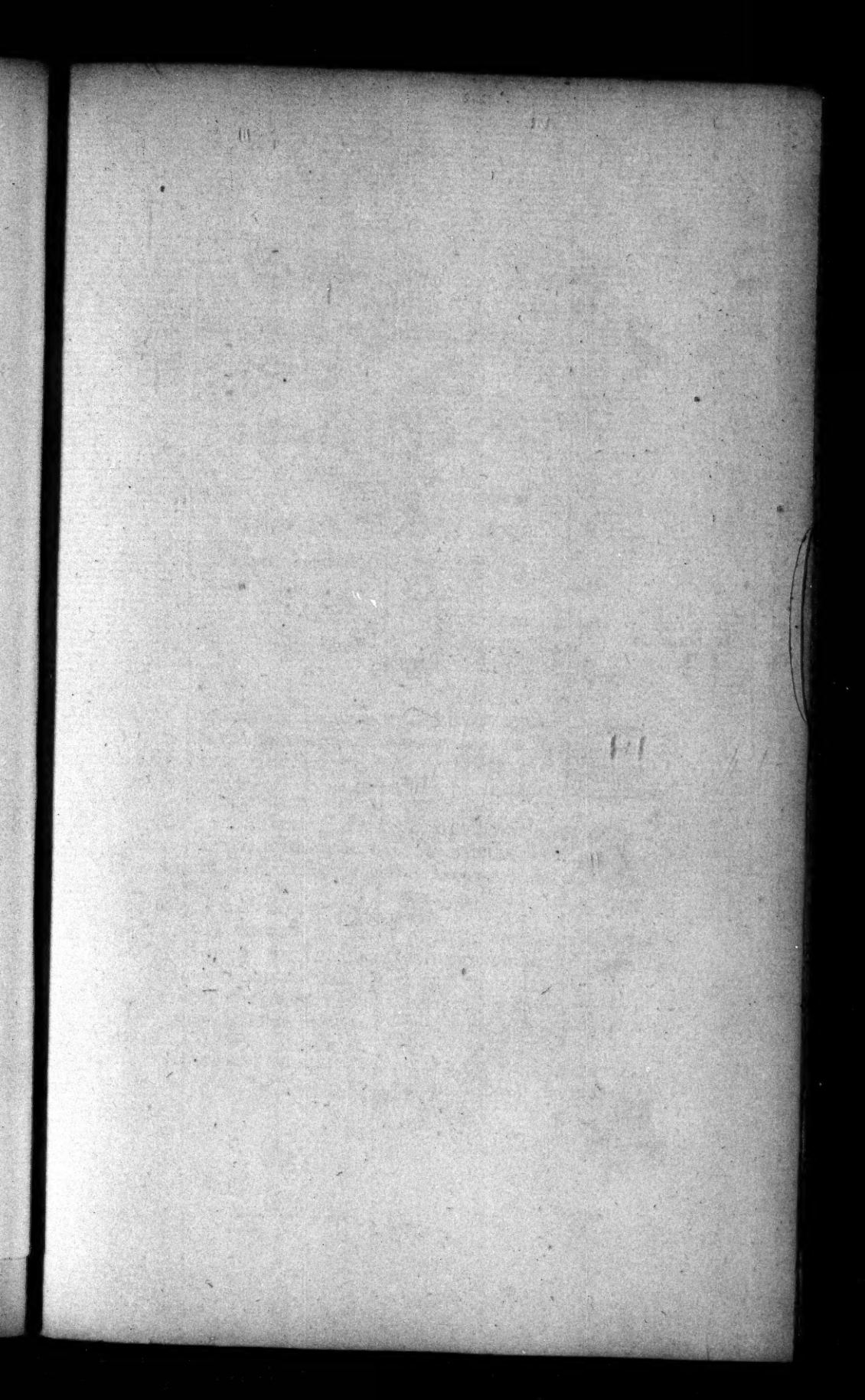
- 1. Weever.
- 2. Ling.
- 3. Burbot.

ORDER III. THORACIC.

- 1. Sucking-fish.
- 2. Dorado.
- 3. Bull-head.
- 4. Doree.
- 5. Perch.
- 6. Zebra.
- 7. Stickle-back.
- 8. Macarell.

ORDER IV. ABDOMINAL.

- 1. Smelt.
- 2. Gar-fish.
- 3. Flying-fish.
- 4. Carp.



4. Carp.
5. Bream.
6. Gudgeon.
7. Chub.
8. Minow.
9. Bleak.
10. White-bait.

LECTURE VIII.

V. INSECTS. (1)

ORDER I. COLEOPTERA.

1. *Scarabæus stercorarius*. *Dung-beetle*.
Melolontha. *Goat-chaffer*.
folstitialis. *Midsummer Dorr*.
auratus. *Green Chaffer*.
 2. *Lucanus*

(1) *Fundamenta Entomologiæ*. By *W. Curtis*. Lond. 1772, 8vo. — *Institutions of Entomology*: by *Thomas Patinson Yeats*. Lond. 1773, 8vo. — *The Genera Insectorum of Linnæus, exemplified by James Barbut*. Lond. 1781, 4to, with coloured plates.

The principal of the old Writers on this Class are, *Mouset Insectorum Theatrum*. — *Aldrovandi animalia insecta*. Bon. 1602, and 1638. — *Goedart Metamorphoses Insectorum*. — *Sawammerdam Historia Insectorum generalis*. — *Raii Historia Insectorum*. Lond. 1720, 4to.

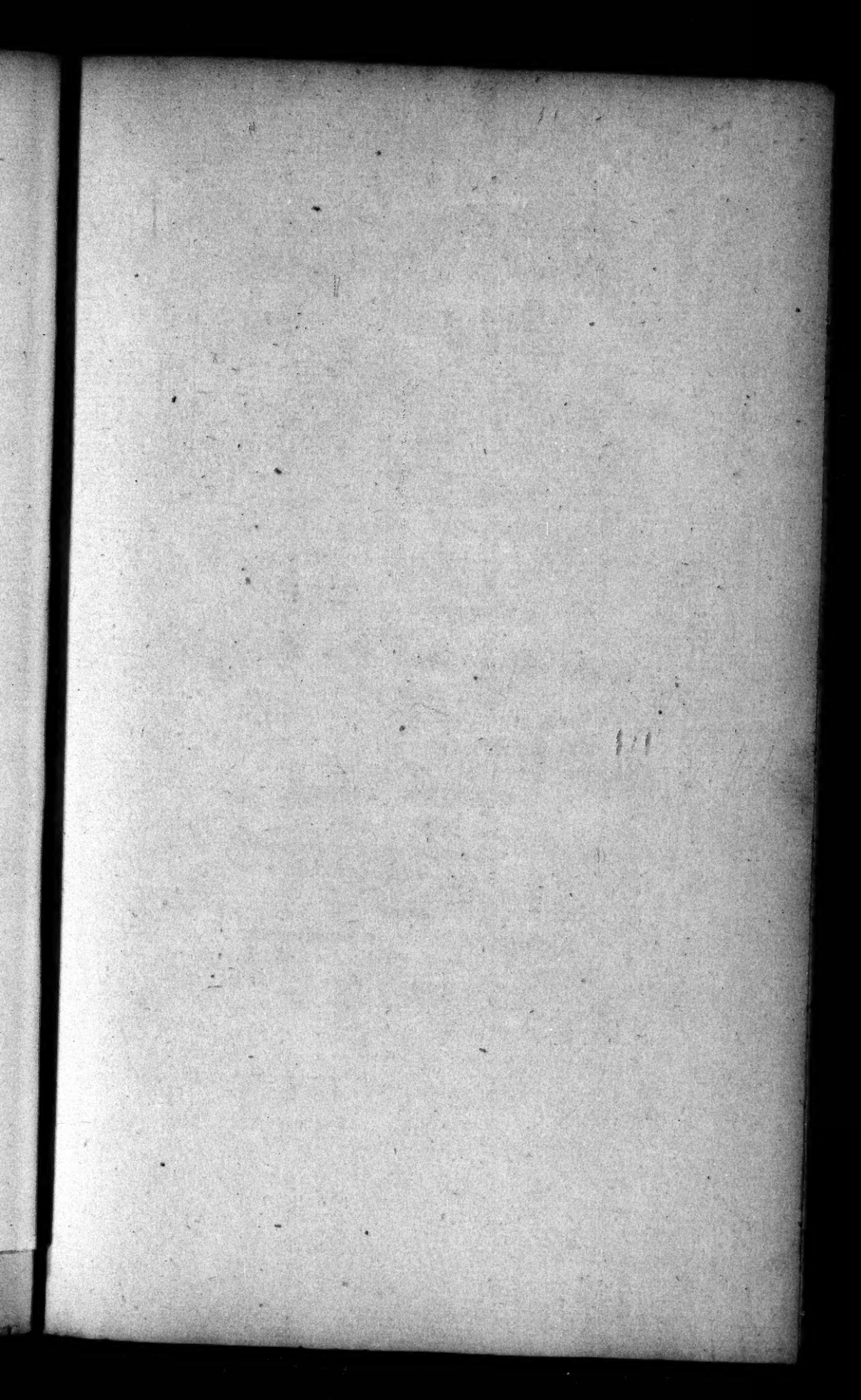
The best books upon the subject are, *Reaumur Histoire des Insectes*. Paris, 1734, 4to, 5 vols. with copper plates. — *Linnæi Fauna Suecica*. Stockh. 1761, 8vo. — *Scopoli Entomologia Carniolica*. Vindobonæ, 1763, 8vo. — *Geoffroy Histoire abrégée des insectes qui se trouvent aux environs de Paris*. 2 vols. 4to, Paris, 1762.

Authors who have published coloured plates are, *Merian, European and Surinam Insects*, folio. — *Frisch Descriptiones Insectorum*.

2. *Lucanus Cervus*. Stag-fly.
3. *Silpha Vespillo*.
4. *Coccinellæ*. Lady-cows.
5. *Chrysomela Göttingensis*.
graminis.
6. *Curculio nukum*.
frumentarius. Weevil.
7. *Cerambyx moschatus*.
8. *Lampyris noctiluca*. Glow-worm.
splendidula. Luciola.
9. *Cantharis fusca*.
10. *Elatér brunneus*.
11. *Cicindela campestris*.
12. *Dytiscus piceus*.
marginalis.
semistriatus.
13. *Carabus hortensis*.
violaceus.
14. *Tenebrio mortifagus*. Slow-legged Beetle.
15. *Meloe Proscarabæus*.
vesicatorius. Blister-flies,
or Cantharides.

Insectorum. Berol. 1720, 4to, in German, with thirty-eight plates. — *Albin*. — *Rösel's Insects*. Norimb. 1746, 4 vols. 4to, in German. — *Jacob Admiral, Waarmingén*. Amsterdam, folio. — *Caroli Clerikii Icones Insectorum rariorum*. Holmiæ, 1759, 4to. — *Sultzer Kenzeiken der Insecten*. Zurich, 1761, 4to. — *Schaeffer Icones Insectorum*. Ratisb. 1767, 4to, and *Fundamenta Entomologiæ* — M. Th. Brunnichii *Entomologia*. Haff. 1764. — *Drury's Illustrations of Natural History*. Lond. 1771, 4to, &c.

ORDER



ORDER II. HEMIPTERA.

1. *Blatta orientalis*.
2. *Mantis*.
3. *Gryllus Gryllotalpa*. *Mole-cricket*.
domesticus. *House-cricket*.
verrucivorus. *Green Grasshopper*.
grossus. *Common Grasshopper*.
cristatus. *Locust*.
4. *Notonecta striata*. *Brown Boat fly*.
5. *Nepa linearis*.
cinerea.
6. *Cimex hyoscyami*. *Henbane Bug*.
lacustris. *Water Spider*.
stagnorum.

LECTURE IX.

INSECTS *continued*.

ORDER III. LEPIDOPTERA. (1)

Butterflies and Moths.

- I. PAPILIO a. *Eques* 1. *Paris*.
 2. *Pammon*.
 3. *Leilus*.
 4. *Machaon*. *Swallow-tail*.
 b. *Heliconius*. 5. *Charithonia*.

(1) These beautiful insects are figured by *Madame Merian*. *Wilkes English Butterflies*. 4to, 125 plates. *Ebret*, in his *Icones Plantarum*. *Harris*, in his *Aurelian*. Lond. folio, 1766. *Sepp*, in a beautiful Work begun in Holland, 1762, 4to, in Dutch, &c.

c. Danaus,

6. Brassicæ, *Cabbage B.*

7. Rapæ.

8. Napi.

9. Cardamines, *Orange-tip.*10. Hyale. *Saffron B.*11. Rhamni. *Brimstone B.*

12. Plexippus.

13. Io. *Peacock's-eye.*14. Galathea. *Marble B.*d. Nymphalis. 15. Cardui. *Painted Lady.*16. Polychloros. *Tortoise-shell.*

17. Urticæ.

18. C. album. *Comma B.*19. Atalanta. *Admiral B.*20. Cinxia. *Plantain Fritillary.*21. Paphia. *Great Frit.*22. Aglaia. *Great Frit.*
with silver spots.

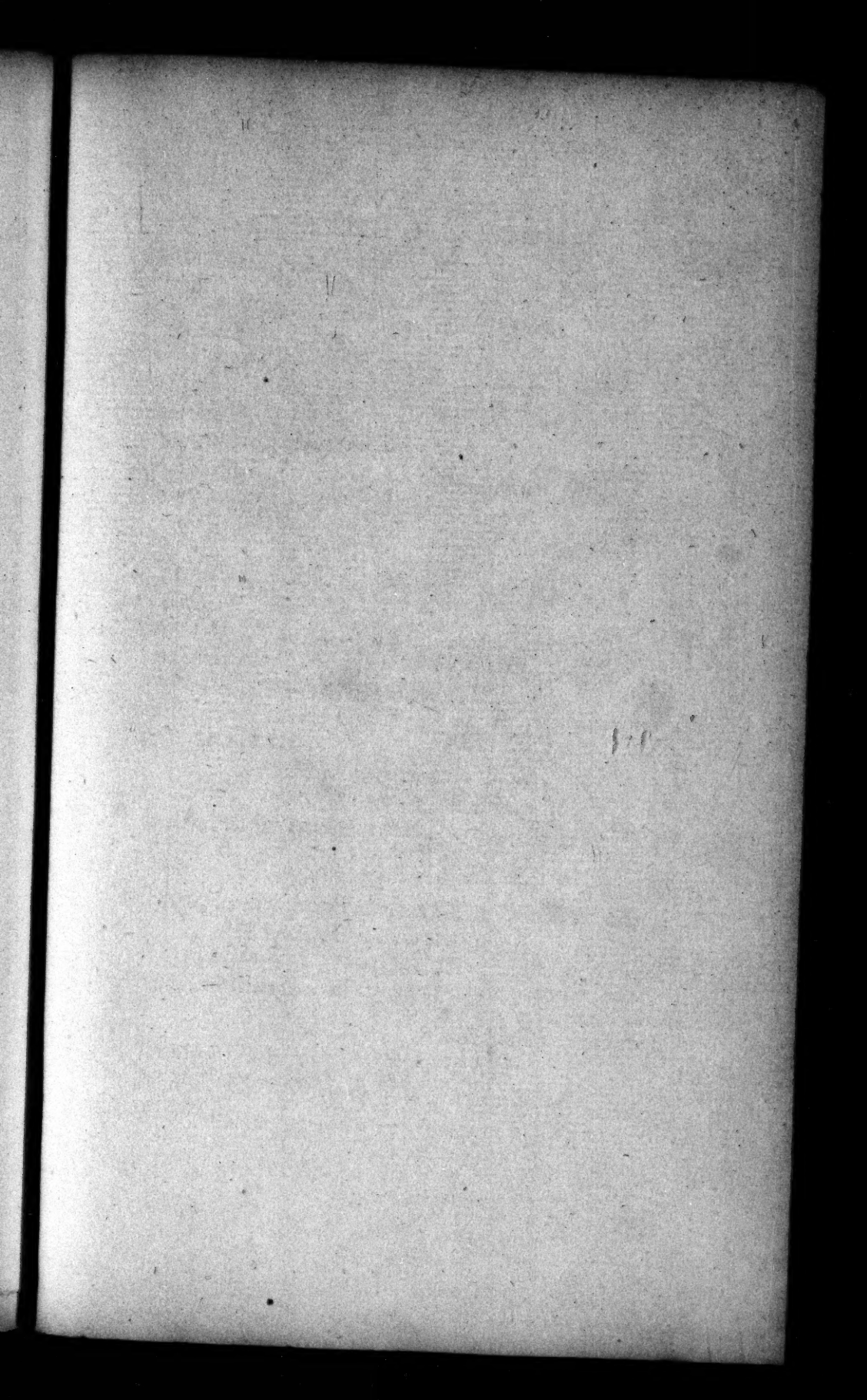
23. Vanillæ.

e. Plebeius. 24. Argus. *Blue Argus.*25. Pamphilus. *Small*
Heath B.

26. Phlæas.

II. SPHINX 1. Ligustri. *Privet Hawk Moth.*2. Elpenor. *Elephant M.*3. Stellatarum. *Large Bee M.*4. Filipendulæ. *Burnet M.*III. PHALÆNA. *Moth.*a. Attacus. 1. Cecropia. *Carolina M.*b. Bombyx. 2. Caja. *Great Tiger M.*

c. Noctua.



- c. Noctua. 3. Jacobææ. *Ragwort M.*
 4. Pronuba. *Yellow under-wing M.*
 5. Gamma. *Lambda M.*
 d. Geometra. 6. grossulariata. *Magpie, or Currant M.*
 7. cratægata. *Brimstone M.*
 e. Tortrix.
 f. Pyralis.
 g. Tinea. 8. Euonymella. *Ermine M.*
 h. Alucita. 9. pentadactyla. *Feathered M.*

LECTURE X.

INSECTS *continued.*

ORDER IV. NEUROPTERA.

- Libellula 1. depressa. } *Adder-bolts, or Dragon-flies.*
 2. grandis. }
 3. Virgo. }
 Ephemera vulgata.
 Phryganea rhombica.
 Hemerobius Perla. *Golden-eye.*

ORDER V. HYMENOPTERA.

- Tenthredo Scrophulariæ.
 Chrysis ignita.
 Vespa 1. Crabro. *Hornet.*
 2. Vulgaris. *Wasp.*
 Apis 1. mellifica. *Bee.*
 2. terrestris. *Humble Bee.*
 3. subterranea. *Great Humble Bee.*

ORDER

ORDER VI. DIPTERA.

Musca 1. Chamælion.

2. tenax.

3. vomitoria. *Blue flesh Fly.*4. carnaria. *Common flesh F.*5. domestica. *House F.*

Afilus crabroniformis.

Bombylius major.

ORDER VII. APTERA.

Pediculus Ovis. *Sheep-Louse.*Acarus Ricinus. *Dog-Tick.*

Aranea avicularia.

Tarantula.

Scorpio 1. Maurus.

2. europæus.

Cancer 1. depurator.

2. Araneus. *Sea Spider.*3. Bernhardus. *Hermis Crab.*4. Aftacus. *Cray-fish.*5. Squilla. *Shrimp.*

Monoculus Polyphemus.

Scolopendra 1. gigantea.

2. moritans.

3. ferruginea.

Julus terrestris.

LECTURE XI.

VI. VERMES. (1)

ORDERS V.

1. *Intestina*. Simple, naked, without limbs.
2. *Mollusca*. Simple, naked, with limbs. No shell.
3. *Testacea*. Simple, naked, with limbs. A calcarious shell.
4. *Lithophyta*. Compound, naked, with limbs. Habitation calcarious, fixed.
5. *Zoophyta*. Compound, vegetating.

ORDER I. INTESTINA.

Gordius marinus. *Marine Hair-worm*.

Ascarus lumbricoides.

Lumbricus terrestris. *Earth-worm*.

Hirudo medicinalis. *Leech*.

sanguisuga. *Horse Leech*.

(1) I beg leave to set down the Writers upon this Class in the expressive words of *Linnaeus* himself—

“Auctores Vermium pretiosi: *Intestinorum* vix ulli; *Mol-*

“*luscorum* præter *Bobadschium* pauci; *Testaceorum* prima-

“*rii*: sobrius *Bonannus* 1681, ditissimus *Lifterus* 1685,

“solidissimus *Rumphius* 1705, curiosissimus *Petiverius* 1702,

“absolutissimus *Gualtierus* 1742, nitidissimus *Argenville*

“1742, omniumque pulcherrimus *Regenfusus* 1758; nec-

“non *Columna*, *Barrelierus*, *Plancus*, *Kleinus*, *Ginannus*,

“*Adansonus*, infelicique partu *Seba*. *Lithophytorum* comes

“*Marfiglius*, oculatus *Donatus*. *Zoophytorum* lynceus *Ellis-*

“*fusus* (Essay on Coralines. Lond. 1755, 4to.) inde-

“fessus *Baisterus*.”

ORDER

ORDER II. MOLLUSCA.

Aphrodita aculeata. *Sea-mouse.*

Sepia officinalis. *Cuttle.*

Loligo. *Great Cuttle.*

Medusa.

Asterias papposa.

rubens.

aculeata.

Caput Medusæ.

Echinus esculentus.

Diadema.

Spatagus.

ORDER III. TESTACEA. *Shell-fish.* (1)

I. *Multivalves.*

Lepas Balanoides. *Acorn-fish.*

Tintinnabulum.

anatifera. *Barnacle.*

Pholas Dactylus. *Piddock.*

II. *Bivalves.*

Mya pictorum.

margaritifera.

Solen Vagina.

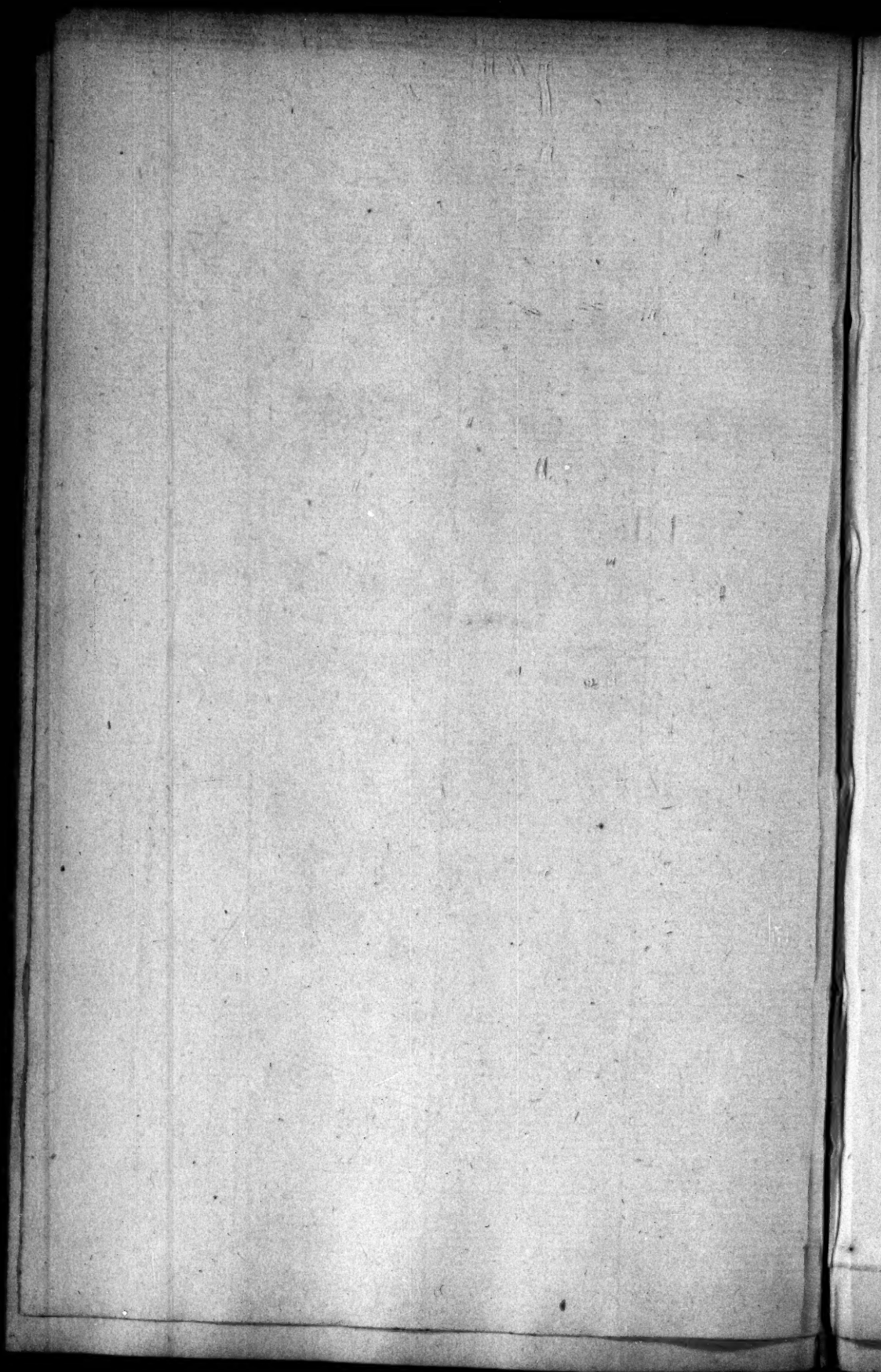
Siliqua.

Ensis.

Legumen.

(1) Elements of Conchology, by Emanuel Mendes da Costa. London 1776, 8vo. For the British Species, see Pennant's *British Zoology*, Vol. iv. — In the same volume are also contained the *Intestina* and *Mollusca*; with the *Crustacea* placed by Linnaeus among the *Apterus insects*.

Tellina



Tellina virgata.
Cardium ferratum.
 edule. *Cockle.*
Donax Trunculus.
Venus Dione.
 Dyfera.
 maculata.
 castrensis.
 literata.
Sphondylus Gæderopus.
Chama Gigas.
Arca Noæ.
Ostrea maxima. *Scallop.*
 edulis. *Oyster.*
Mytilus crista galli. *Tree Muscle.*
 margaritiferus. *Pearl M.*
 edulis. *Common M.*
 cygneus.
Hirundo.
Pinna rudis.

LECTURE XII.

VERMES *continued.*

TESTACEA or *Shell-fish.*

Univalves.

Argonauta Argo. *Paper Nautilus.*
Nautilus Pompilius. *Chambered Sailor.*
Spirula. *Ram's-horn Sailor.*

D

Conus

Conus marmoreus. *Black Tiger Cone.*

litteratus.

Capitaneus.

ebraeus.

Textile.

Cypræa exanthema.

arabica.

Talpa.

mauritiana.

Vitellus.

Tigris.

Lynx.

Afellus.

Moneta.

erosa.

Pediculus.

Bulla Ovum.

gibbosa.

Ampulla.

Voluta porphyria.

Oliva.

mercatoria.

rustica.

Musica.

Buccinum Olearium.

Dolium.

rufum.

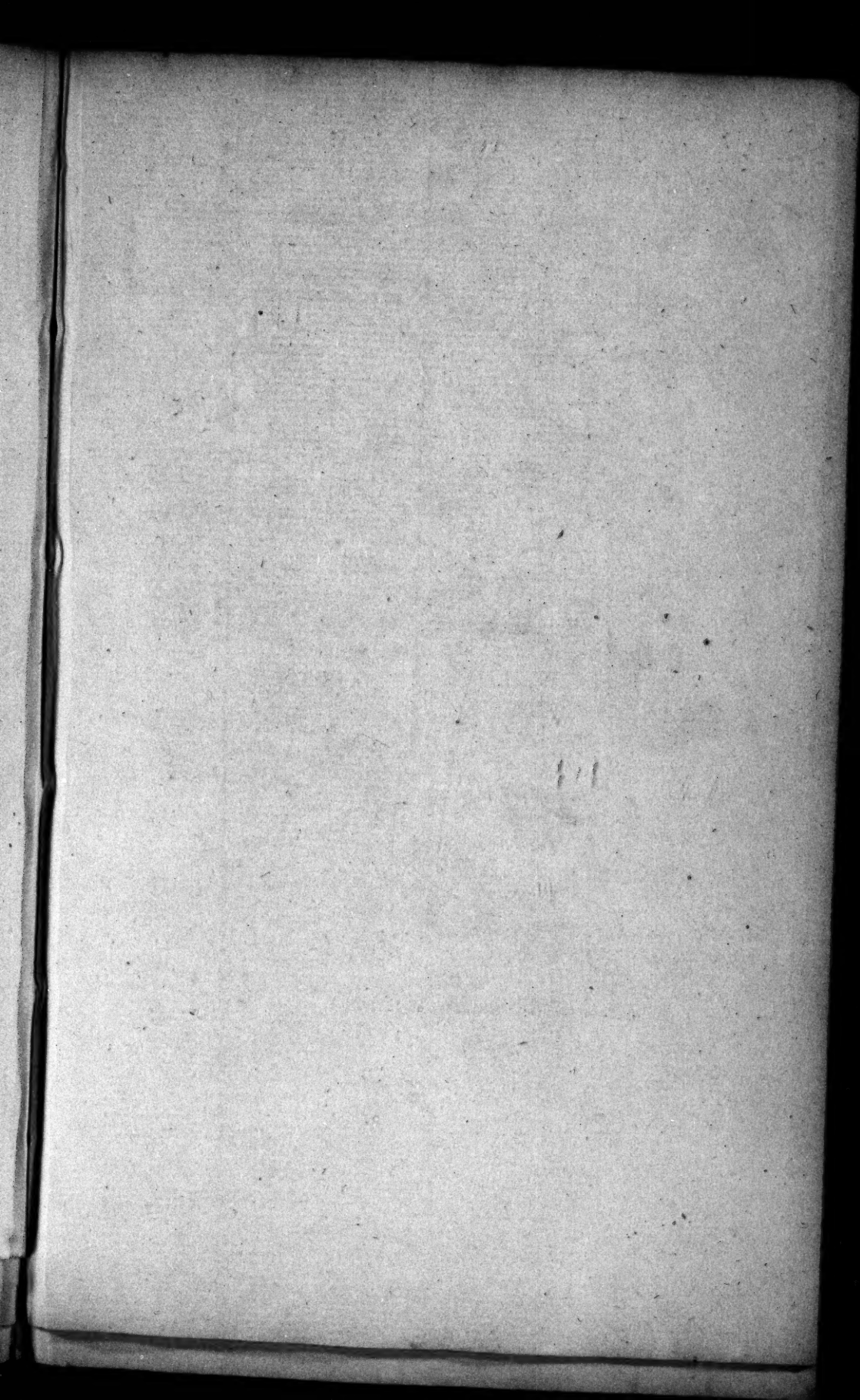
Harpa.

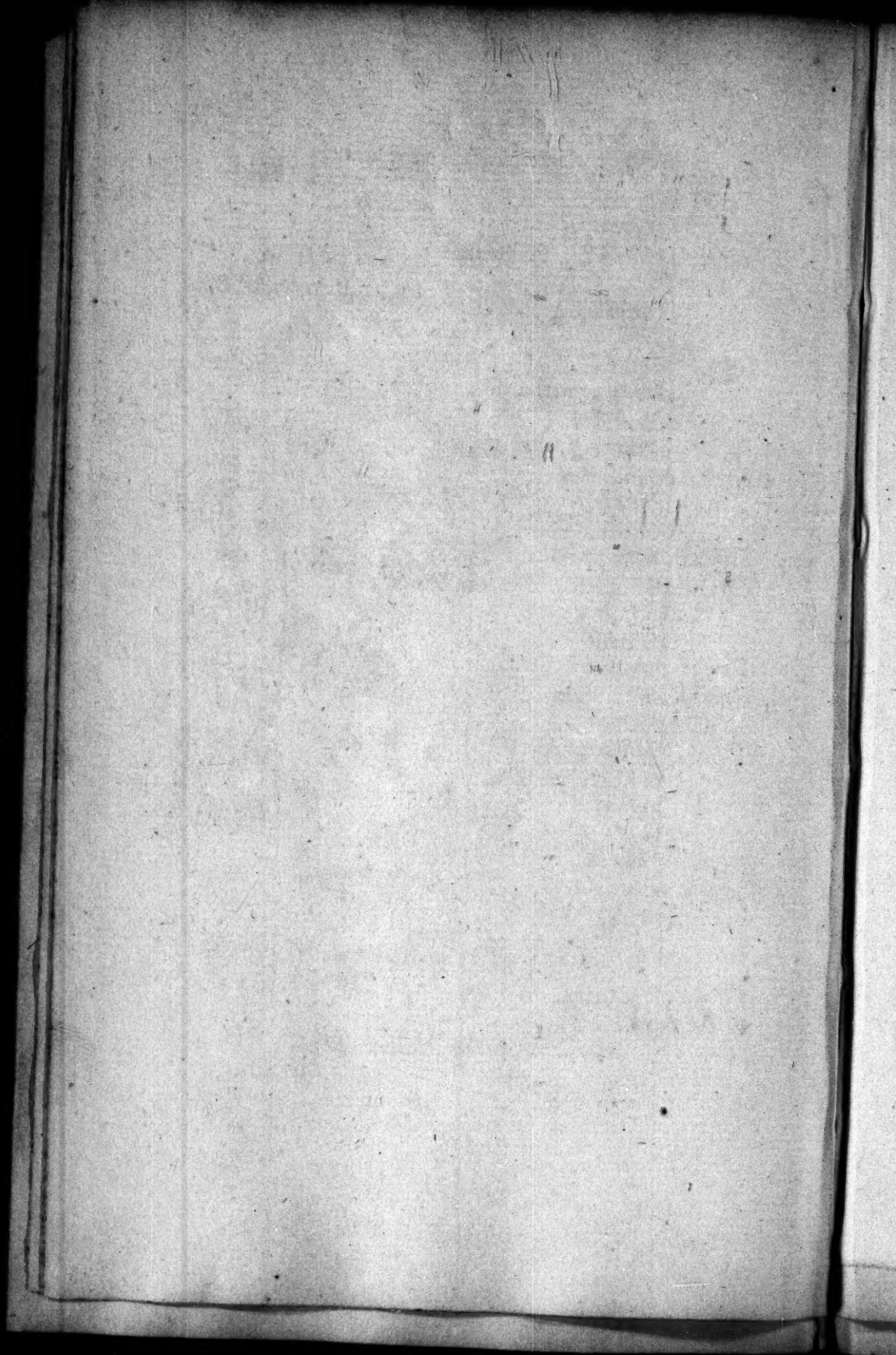
reticulatum.

Strombus Pespellicani.

Chiragra.

Murex





- Murex Tribulus.**
 ramosus.
 Femorale.
Turbo littoreus, Periwinkle.
 Pica.
 Clathrus.
 Uva.
Helix Pomatia.
 Janthina.
 nemoralis.
 lucorum / hortenſis.
Nerita Mammilla.
 littoralis.
 viridis.
Haliotis tuberculata.
Patella fornicata, Vaulted Limpet.
 lacinioſa.
 vulgata.
 græca.
Dentalium Entalis.
Serpula ſpirorbis.
 intricata.
 contortuplicata.
 arenaria.
 vermicularis.
Teredo navalis.
Sabella alveolata.
 rudis.

ORDER IV. LITHOPHYTA.

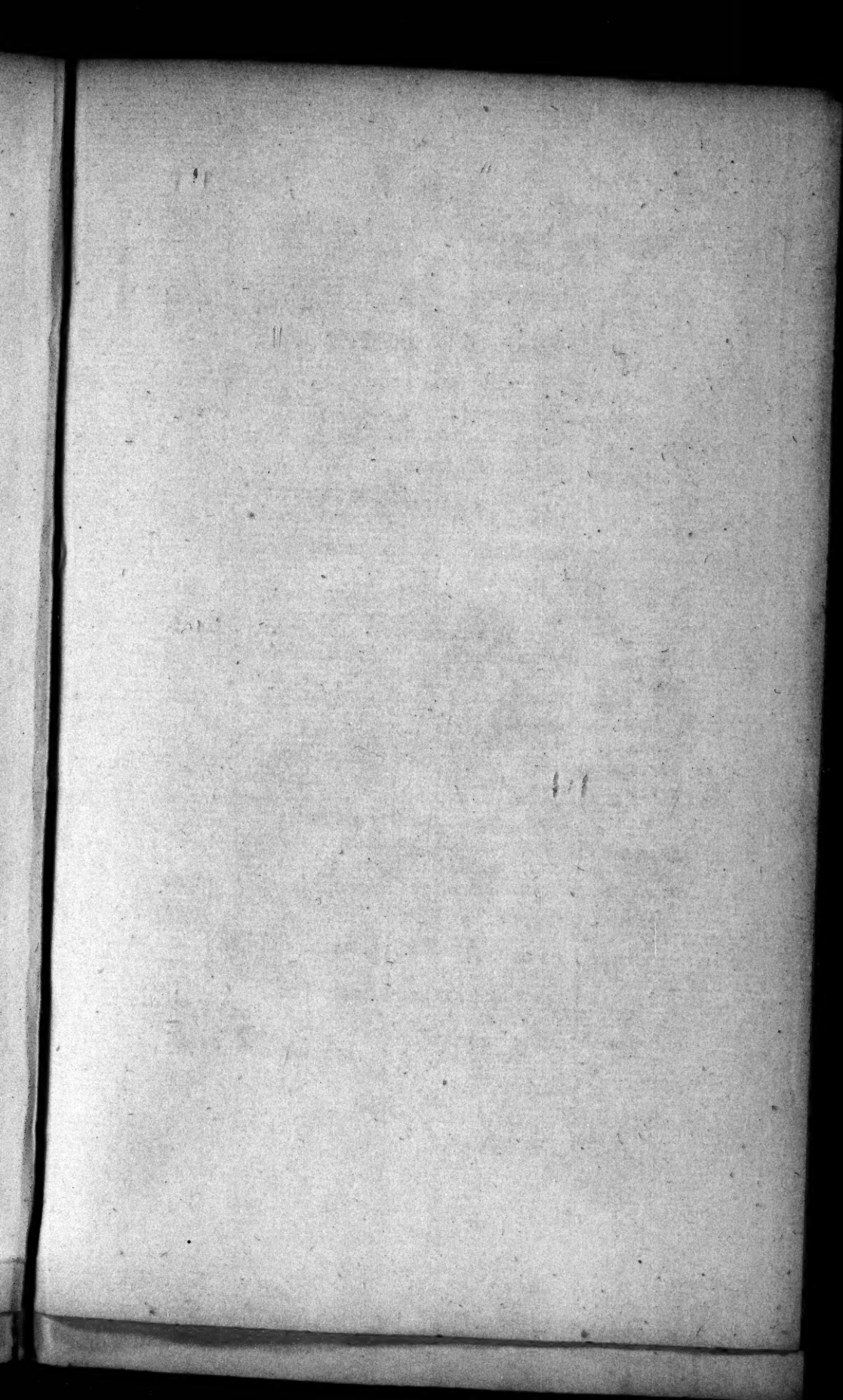
- Tubipora muſica.**
Madrepora Fungites.
 labyrinthiformis. *Brain-stone.*
 D 2 *Madre-*

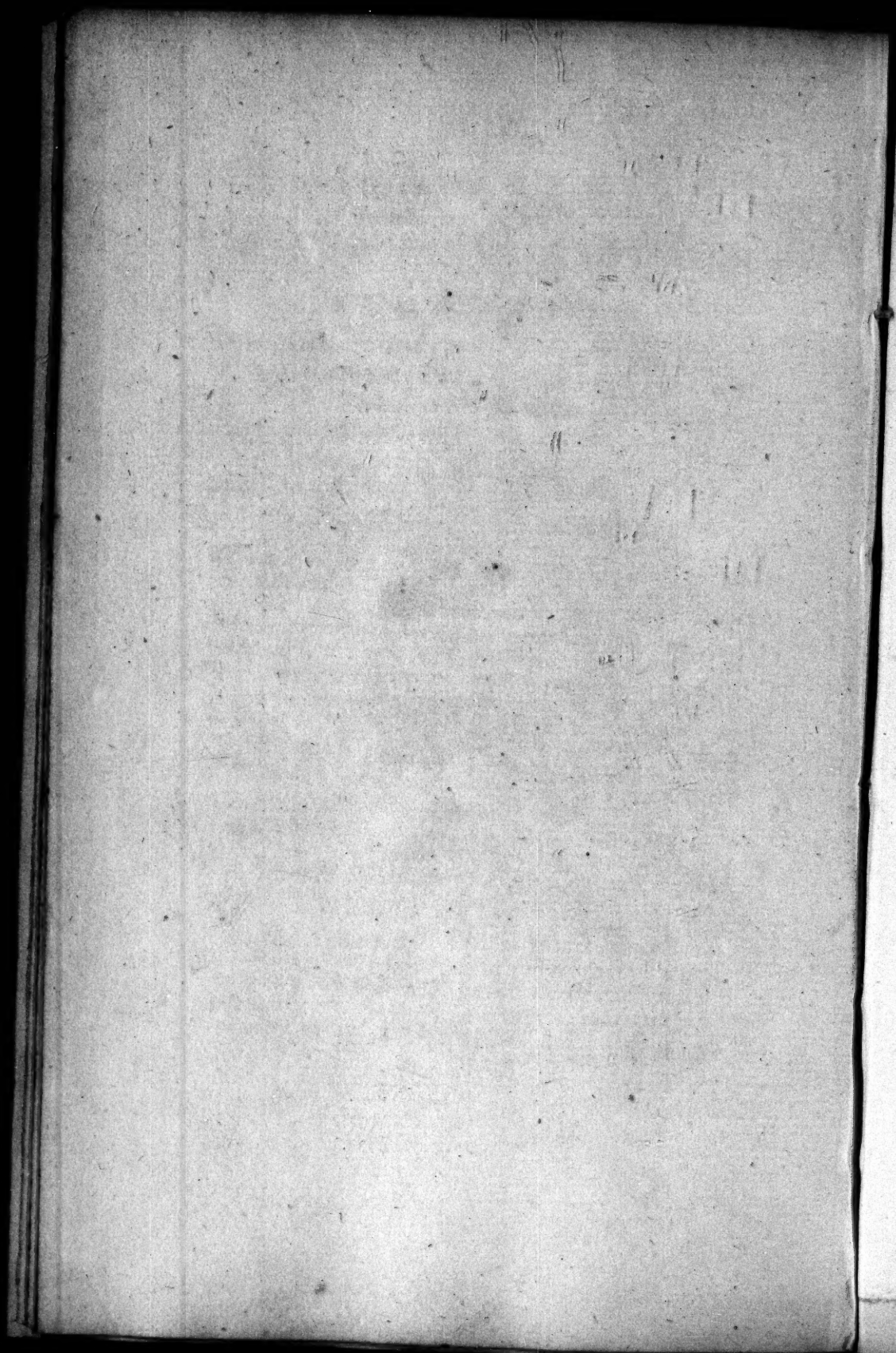
Madrepora favosa.
 ramea.
 virginica.

ORDER V. ZOOPHYTA.

Ifis nobilis. *Red Coral.*
Gorgonia ceratophyta.
 Flabellum. *Sea Fan,*
Spongia infundibuliformis,
 oculata.
Flustra foliacea.
 truncata.
Sertularia halecina.
Pennatula rubra.

PART





PART II.

THE VEGETABLE KINGDOM. (1)

LECTURE XIII. (2)

Root.

Stem.

Leaves.

Fulcra.

LECTURE XIV.

Fructification.

(1) In this part of Natural History, *Linnaeus* is himself *an host*. In his *Systema, Genera & Species Plantarum*, the Generic and Specific Characters of all known Plants are laid down with wonderful conciseness and precision. His *Flora Suecica* is a model for local *Floras*: as his *Flora Laponica* is of elegance in this sort of Composition.

Ray's History is useful for descriptions; and *Morison's* for abundance of figures. *Hudson's Flora Anglica* and *Lightfoot's Flora Scotica*, will give us the indigenous Plants of Britain. *Curtis*, in his *Flora Londinensis*, has figured them well.

The best Plates are in *Oeder's Flora Danica*. *Haller's Flora Helvetica*. *Rivinus*. *Dillenii Hortus Elthamensis*. *Linnaei Hortus Cliffortianus*. *Vaillant*. *Columna*. *Lobel*. *Clusius*. *Brunfelsius*, &c. Expensive illuminated Plates are given, by *Catesby*, *Martyn*, the two *Millers*, *Merian*, *Blackwell*, &c.

(2) For the detail of these Introductory Lectures in Botany, see the Preface to the Catalogue of the Botanic Garden. The Principles are fully laid down in *Linnaei Philosophia Botanica*; in *Lee's Introduction to Botany*, and *Rose's Elements*; both taken from this; and in *Berkenhout's* or *Milne's Dictionaries*.

L E C.

LECTURE XV.

Theory of Vegetation. ⁽¹⁾

History of Botany. ⁽²⁾

LECTURE XVI.

Systematic Writers. ⁽³⁾

The System of *Linnaeus* explained, and the doctrine of the Sexes in Plants, particularly proved ⁽⁴⁾

LECTURE XVII. ⁽⁵⁾

Monandria.

Diandria.

Triandria. ⁽⁶⁾

LECTURE XVIII.

Tetrandria.

Pentandria Monogynia.

⁽¹⁾ See *Hales's Vegetable Staticks*. *Grew's Anatomy*, &c.

⁽²⁾ *Seguier's Bibliotheca Botanica*; and the Prefaces to *Tournefort's Institutes* and *Royen's Prodrômus*. *Rose's Elements*, p. 3, &c.

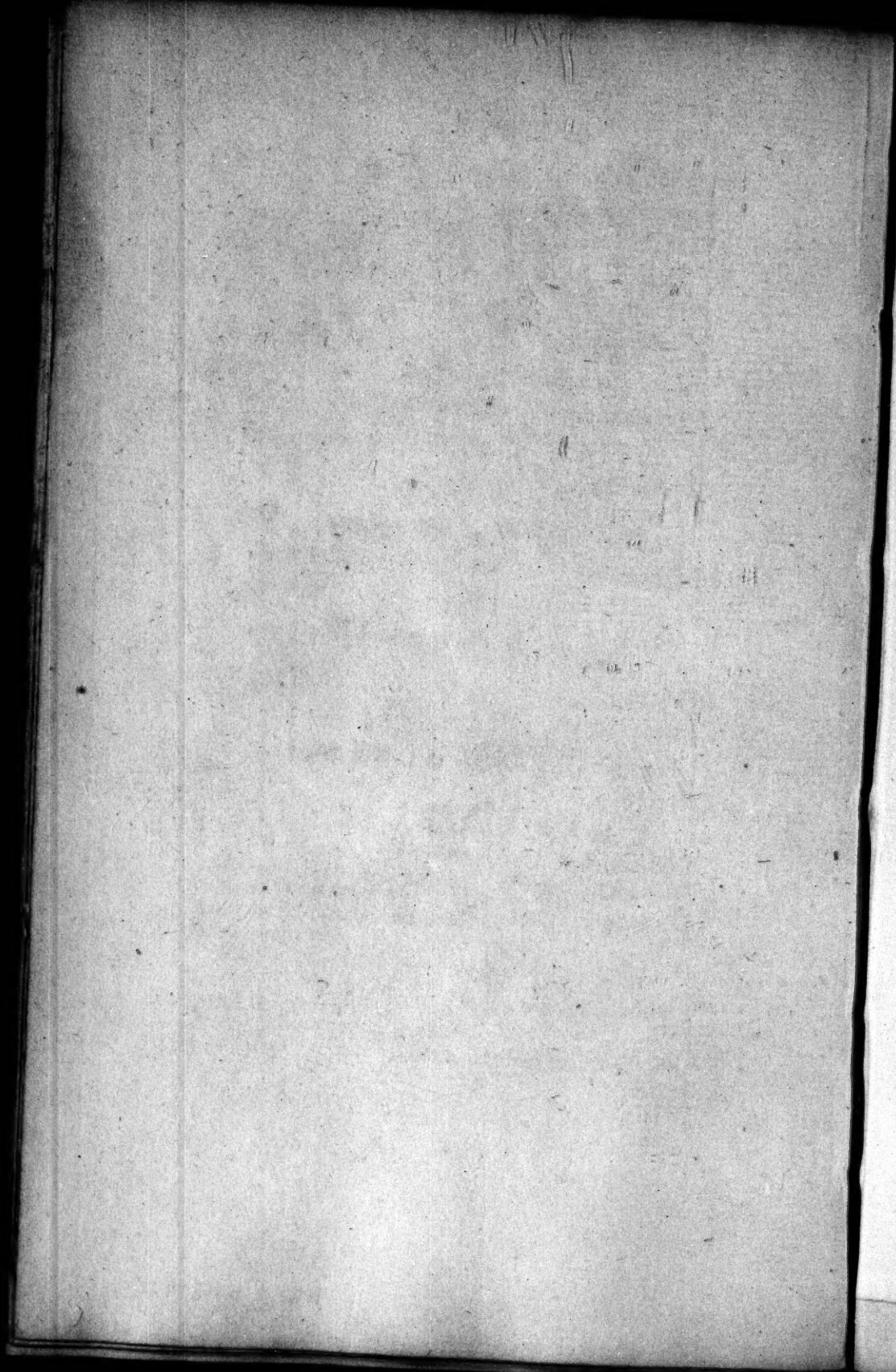
⁽³⁾ See *Catalogus Horti Botanici*: præf. vii—ix. *Linnaei Philosophia*, p. 18, &c. §. 53—69. *Rose's Elements*, p. 18, &c.

⁽⁴⁾ *Catalogue*, præf. p. 10. *Lee's Introduction*, part ii. p. 66, &c. *Rose's Elements*, p. 38, &c.

⁽⁵⁾ In this, and the following Lectures, Plants are exhibited, as near as the season will permit, in the order of the Catalogue.

⁽⁶⁾ For the Grasses, which belong to this Class, see *Raii Methodus*. *Monti*. *Scheuchzer*. *Schreber*. *Stillingfleet*.





LECTURE XIX.

Pentandria Digynia, &c. ⁽¹⁾

Hexandria.

LECTURE XX.

Heptandria.

Octandria.

Enneandria.

Decandria

Dodecandria.

LECTURE XXI.

Icosandria.

Polyandria.

LECTURE XXII.

Didynamia.

Tetradynamia.

LECTURE XXIII.

Monadelphia.

Diadelphia.

Polyadelphia.

LECTURE XXIV.

Syngenesia.

LECTURE XXV.

Gynandria.

Monoecia.

Dioecia.

Polygamia.

LECTURE XXVI.

Cryptogamia. ⁽²⁾

⁽¹⁾ See Morison, Rivinus, Crantz.

⁽²⁾ Dillenii *Historia Muscorum*.

P A R T III.
THE FOSSIL KINGDOM. (¹)
L E C T U R E XXVII.
I. E A R T H S.

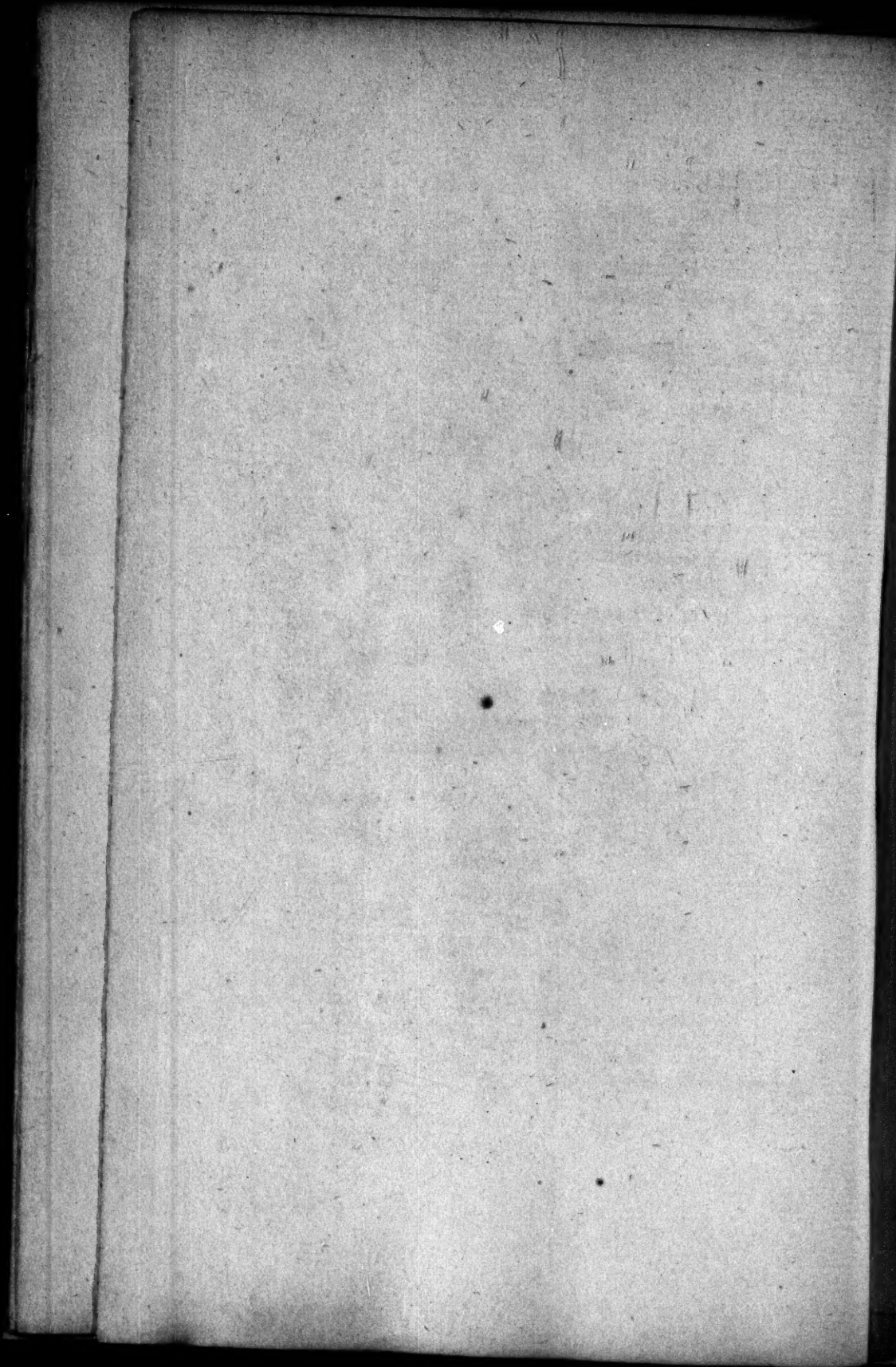
1. Mould. Turf.
2. Calcareous.
Chalk.
Marle.
Mineral Agaric, or *Lac Luna*.
3. Argillaceous.
Brick Clay.
Foliaceous Clay.
Potter's Clay.
Fuller's-earth.
Boles.
Porcelain Clay.
Pipe-maker's Clay.

(¹) Authors, besides *Linnaeus* in the third volume of his *Systema Naturæ* are, *Wallerius*: Mineralogia, Holmiæ, 1775, 2 vols. 8vo. *Bomare*: Mineralogie. Paris, 1774, 2nd edit. 2 vols. 8vo. *Cronstedt*: Essay towards a System of Mineralogy. English, printed at London, 1772, 8vo. *Bertrand*: Dictionnaire des Fossiles. Avignon, 1763, 8vo.

Woodward: Essay towards a Natural History of the Earth. Lond. 1723, 8vo. — Method of Fossils. Lond. 1728, 8vo. — Attempt towards a Natural History of the Fossils of England. Lond. 1729, 8vo. 2 vols. This is a Catalogue of his Cabinet, now belonging to the University.

Clay





Clay Marle.

Loam.

4. *Ochraceous.*

Red Ochre.

Yellow Ochre.

5. *Tripela.*

6. *Volcanic.* Cement or Puzzolana.

7. *Arenaceous.*

Sands.

LECTURE XXVIII.

II. STONES.

I. CALCAREOUS.

1. Limestone.

2. Marble.

1. Of one colour.

2. Variegated.

3. Figured.

Marmo Paesino.

M. Dendritico.

4. Testaceous. *Lumachella.*

3. Spar. (¹)

1. Cubic or Rhomboidal
spar, opake.

2. Foliateous.

3. Sandy.

4. Rhomboidal, pellucid.

5. Island Crystal.

6. Chrystallized.

7. Stinking. *Lapis Suilli,*
or *Pierre Porc.*

(¹) *Romé Delisle, Essai de Cristallographie.* Par. 1772, 8vo.

E

4. Gypsum.

4. Gypsum.

1. Alabaster.
2. Plaster-stone.
3. Selenites.
4. Crystallized Gypsum.

5 Fluor.

1. Solid purple Fluor.
2. Sparry Fluor. Vitreous,
or fusible spar.

II. VITRIFIABLE.

1. Sandstone.

1. Turkey Whetstone.
2. Fine Whetstone.
3. Building Sandstone.
4. Scythe-stone, or Rubber.
5. Mill-stone, or Grit-stone.

2. Feld-spat.

3. Quartz.

1. Greasy Quartz.
2. Transparent.
3. Milky.
4. Coloured.

4. Gems.

5. Garnet-stones.

6. 1. Flint. 2. Petrofilex. 3. Agate.

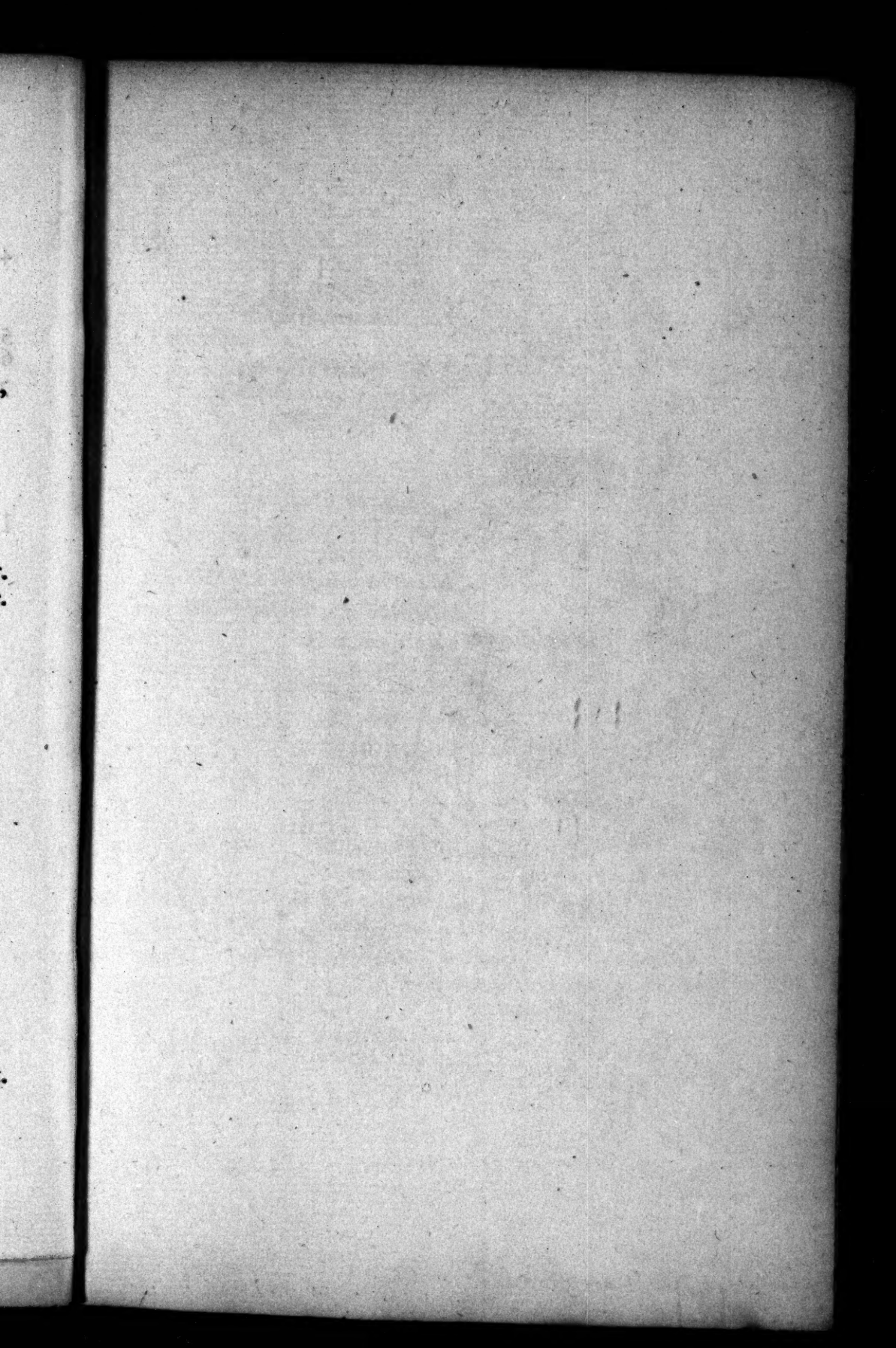
1. Pebbles.
2. Horny Flints.
3. Gun Flints.
4. Egyptian Pebble.

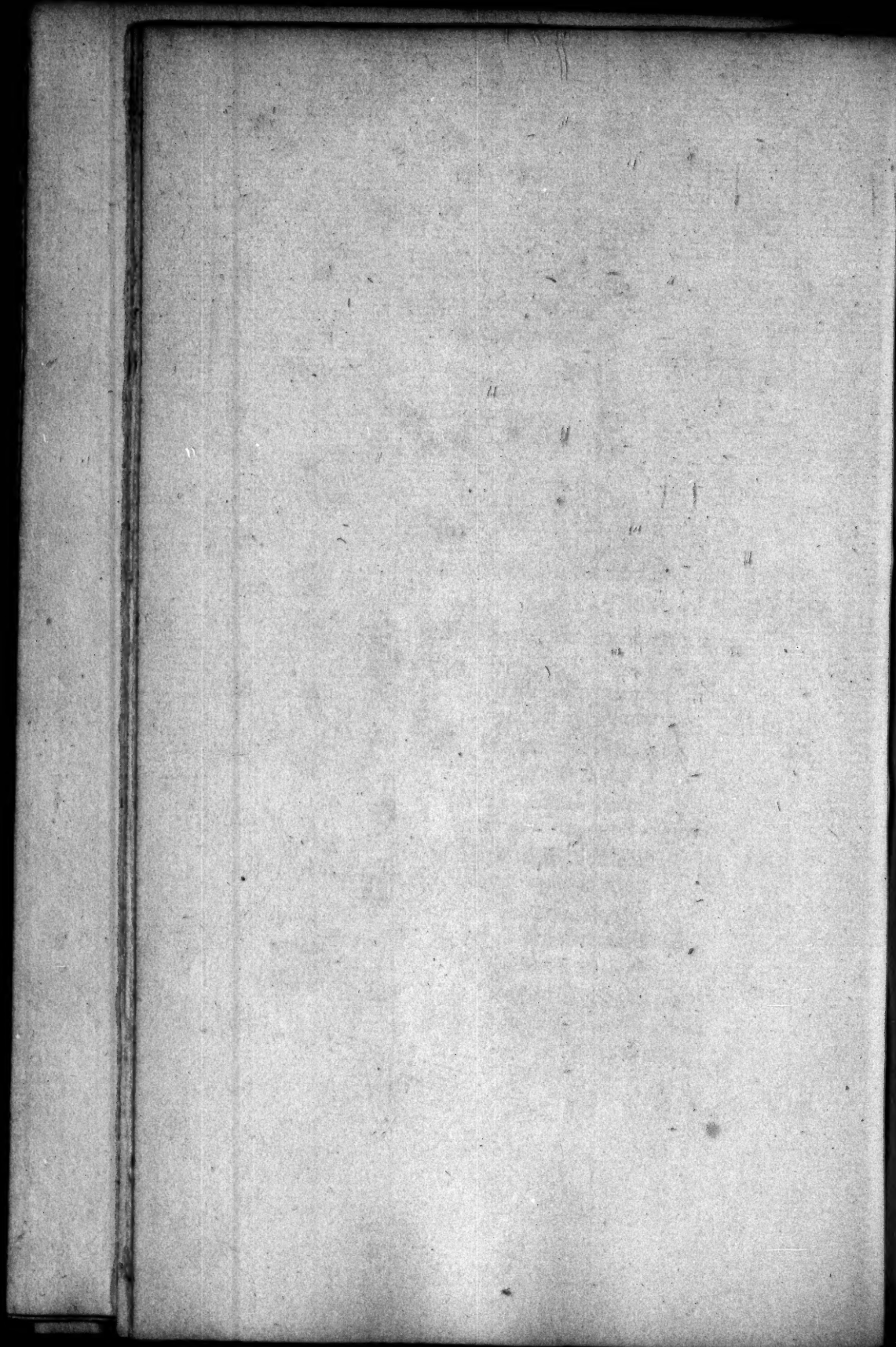
2. Petrofilex.

3 Agate.

1. Carnelion.
2. Calcedony.

3. Onyx.





3. Onyx.
 4. Opal.
 5. Pseud-Opal.
 6. Oculus mundi.
 7. Common Agate.
 8. Mocho-stone.
7. Jasper.
1. One-coloured.
 2. Variegated.
 3. Jasp-Achates.

LECTURE XXIX.

STONES *continued.*

III. FUSIBLE.

1. Zeolitic or Basaltine Stones.

1. Lapis Lazuli.
2. Sparry Schorl.
3. Fibrous Schorl.
4. Chrystallized Schorl.
5. Chrystallized Lava.
6. Solid Lava.

2. Fissile Stones.

1. Black Slate.
 2. Blue Slate.
 3. Alum Slate.
 4. Hard Schiff.
 5. Pebble Schiff.
 6. Black Crayon.
3. Marl-stone.
 4. Horn-stone.

IV. REFRACTARY.

I. 1. Mica.

1. Muscovy Glafs.
2. Scaly Mica, or Glimmer.
2. Talc.

1. Venice Talc.
2. Talc Stones.
3. Briançon Chalk.
4. Fibrous Talc.

II. Steatites.

1. Spanish Chalk.
2. Cornish Soap-rock.
3. French Chalk.
4. Lardites.
5. Serpentine.
6. Lapis ollaris.

III. Asbestus & Amiantus.

1. Amiantus, or fossil Flax.
2. Asbestus murex.
3. Alumen plumosum.
4. Suber montanum.

LECTURE XXX.

V. SAXA. ROCK, COMPOUND or MIXT STONES.

A. *Compound or mixt Stones.*

1. Granite.
2. Furnace or Mill-stone.
3. Porphyry.
4. Verd-antique.
5. Whetstones.

6. Compound

II

r

6. Compound Horn-stones.

7. Piperino.

8. Serpentine.

9. Glandulose.

B. Aggregate Stones.

1. Calcareous Breccia.

2. Gravel Breccia.

3. Pudding-stone.

4. Jasper Breccia.

LECTURE XXXI.

III. SALTS and INFLAMMABLES.

I. SALTS.

1. Acid Salts, or Mineral Acids.

1. Acid of Vitriol.

2. Acid of Nitre.

3. Acid of Sea Salt.

2. Vitriol.

1. Vitriol of Copper, or Blue Vitriol.

2. Vitriol of Iron, Green Vitriol or Copperas.

3. Vitriol of Zinc, or White Vitriol.

3. Alum.

1. Native Alum.

2. Aluminous earth.

3. Calcareous Alum Stone.

4. Alum Slate.

4. Nitre.

1. Nitrous Earth.

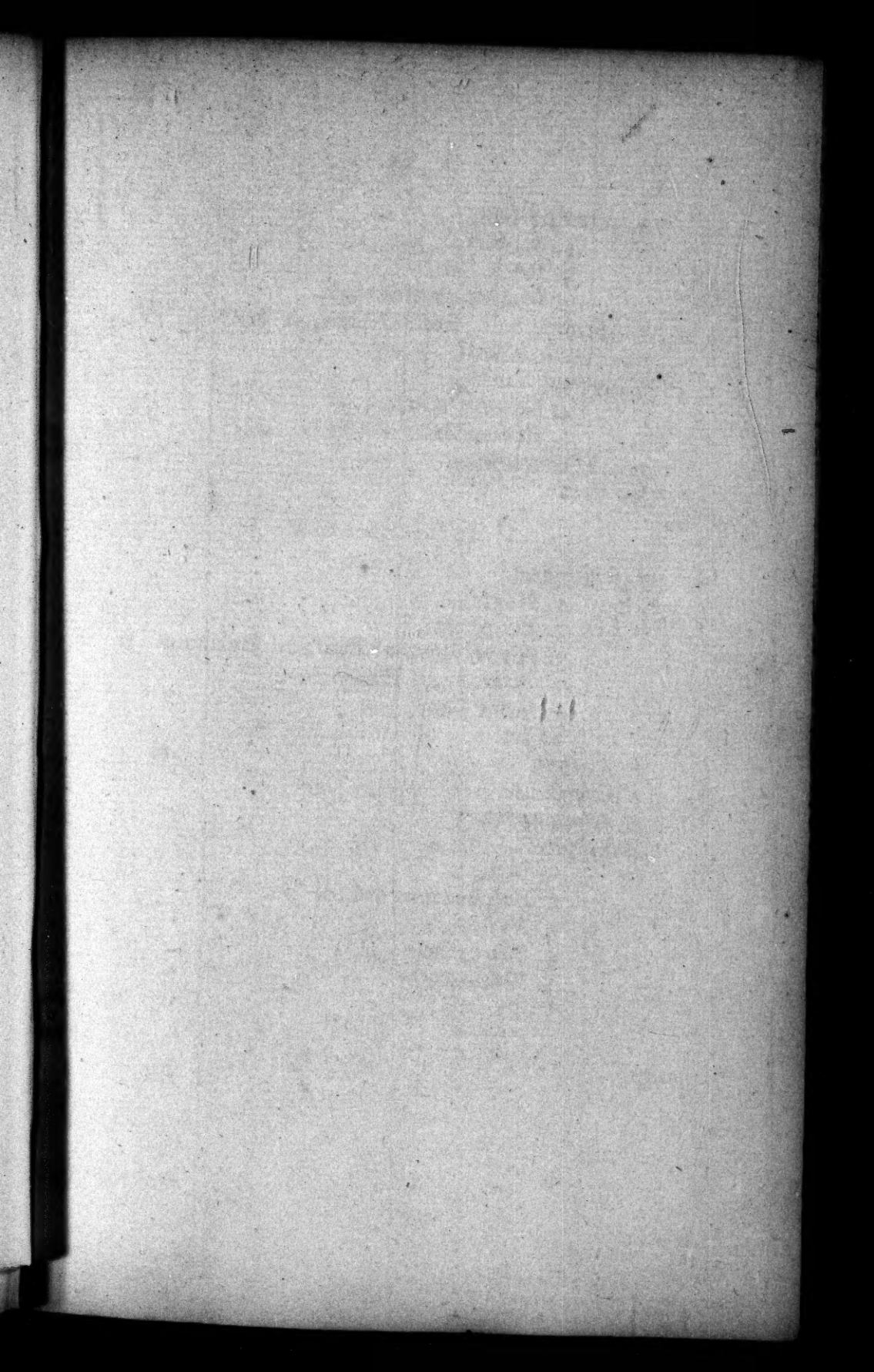
2. Nitrous Plaster.

5. Common

5. Common Salt.
 1. Sal Gem.
 2. Rock Salt.
 3. Marine or table Salt.
6. Alkaline Salt, Fossil Alkali, or Natron.
7. Volatile Alkali.
8. Neutral Salts.
 1. Glauber's Salt.
 2. Epsom Salt.
9. Sal Ammoniac.
10. Borax.

II. INFLAMMABLES:

1. Bitumens:
 1. Naphta.
 2. Petroleum.
 3. Asphaltum, or Bitumen Judaicum.
 4. Bituminous Earth.
 5. Stone Coal.
 6. Jet.
2. Amber.
Copal.
3. Ambregrise.
4. Sulphur.
 1. Native.
 2. Sulphureous earths.
 3. Pyrites.
 4. Marcasite.
 5. Black-lead.



LECTURE XXXII.

IV. SEMIMETALS and METALS.

A. Semimetals.

1. Mercury.
Cinnabar.
2. Arsenic.
Realgar.
Orpiment.
3. Cobalt.
4. Nickell, Niccol, or Kupfer-Nickel.
5. Antimony.
6. Bismuth.
7. Zinc.
Lapis Calaminaris, or Calamin.
Blend.

B. Metals.

1. Iron.
Magnet or Loadstone.
Emery.
Hæmatites.
Iron Sand.
Ochres.
2. Copper.
Native.
Ores of different kinds.
Process of extracting the Metal from
the Ore.
3. Lead.
Native.
Ores of different kinds.
Process of smelting Lead Ores.

4. Tin.

4. Tin.
Tin grains, and other Ores.
5. Silver.
Native.
Ores.
6. Gold.
Native.
Ores.
7. Platina.

LECTURE XXXIII.

V. CONCRETES.

ORDER I. PORES.

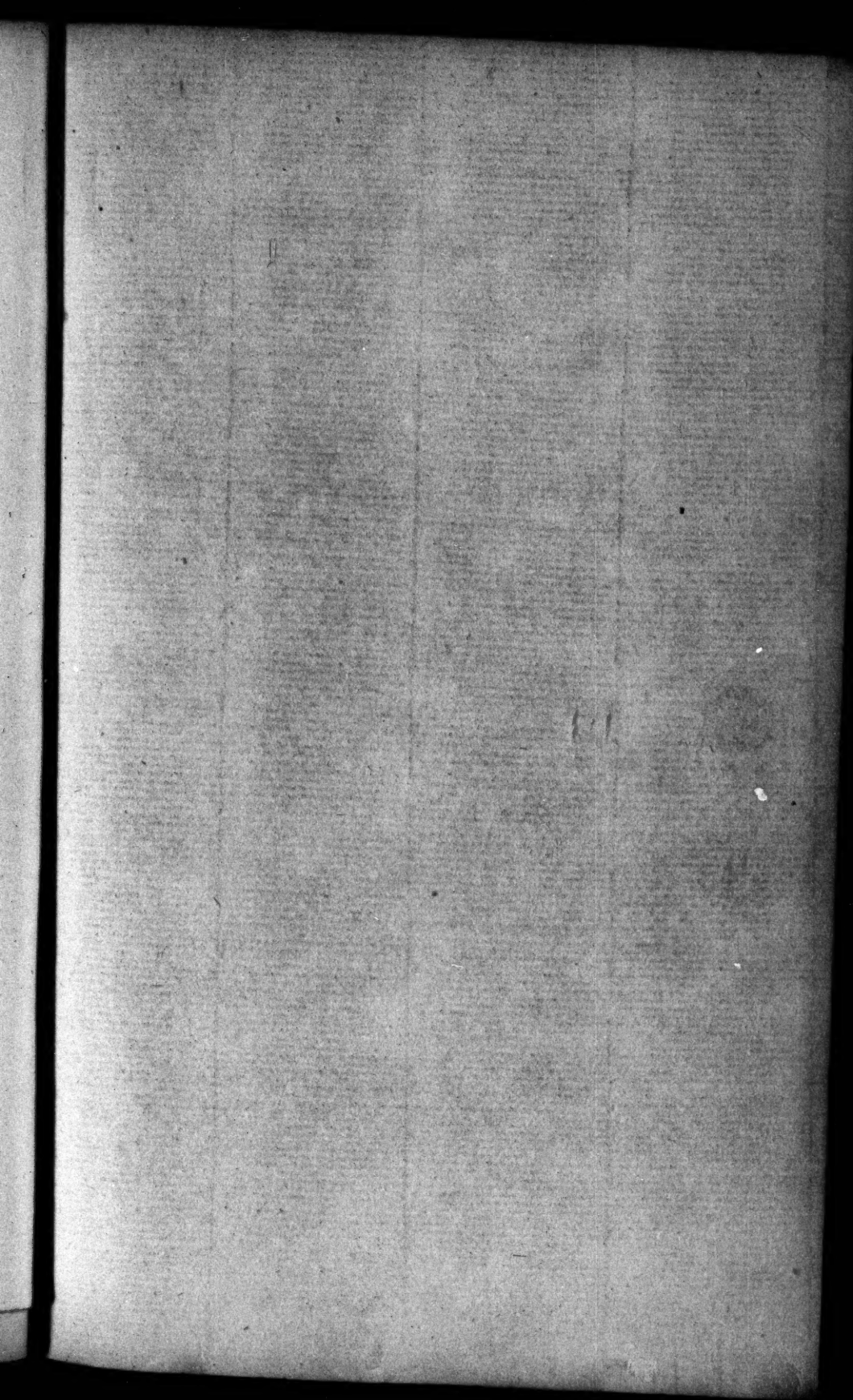
A. *Volcanic Pores.*

1. Volcanic Ashes, Cinders and Slags.
2. Pumice.
3. Tufo.
4. Piperino.
5. Lava.
6. Island Agate, Volcanic Glass, Pierre de Gallinace, or Lapis Obsidianus.

B. *Aqueous Pores.*

1. Incrustations.
2. Osteocolla. Fossil Unicorn.
3. Oolithus. Pisolithus.
4. Stalactites.
5. Stalagmites.
6. Sparry Stalactites.
7. Tophus or Sediment.

8. Ludus



8. Ludus Helmontii.
9. Sandy concretions.

ORDER II. PETRIFICATIONS.

A. Vegetables. a. *Phytolithi*.

1. Petrified Plants.
2. Petrified Wood.
3. Petrified Fruits.
 - b. Impressions. *Phytotypolithi*:
 1. Stalks, Leaves, Fruits, &c.
 - c. Changed into Earth, or Mineralized.
 - d. Hardened.
1. Fossil Wood.

B. Animals.

1. *Corals, Coralloids. Lithophyta.*
 1. Madreporæ.
 2. Milieporæ.
 3. Tubulariæ.
 4. Astroïtæ.
 5. Brainstone. *Cerebrites*.
 6. Honeycomb-stone. *Favagites*.
 7. Lithostrotion.
 8. Eschara, or Retepora.
 9. Hippurites. *Mycetiti*.
 10. Porpitæ.
 11. Corallo-Fungitæ.
 12. Keratophyta.
2. *Helmintolithi. Fossil Vermes.*
 1. Belemniti.
 2. Trochitæ. Entrochitæ. Entrochi
ramosi.
 3. Asteriæ.

3. Asteriæ.
4. Encrini.
5. Caryophyllites, or Modioli.

LECTURE XXXIV.

PETRIFACTIONS *continued*,

3. *Helmintolithi Testacei*,

Fossil Shells.

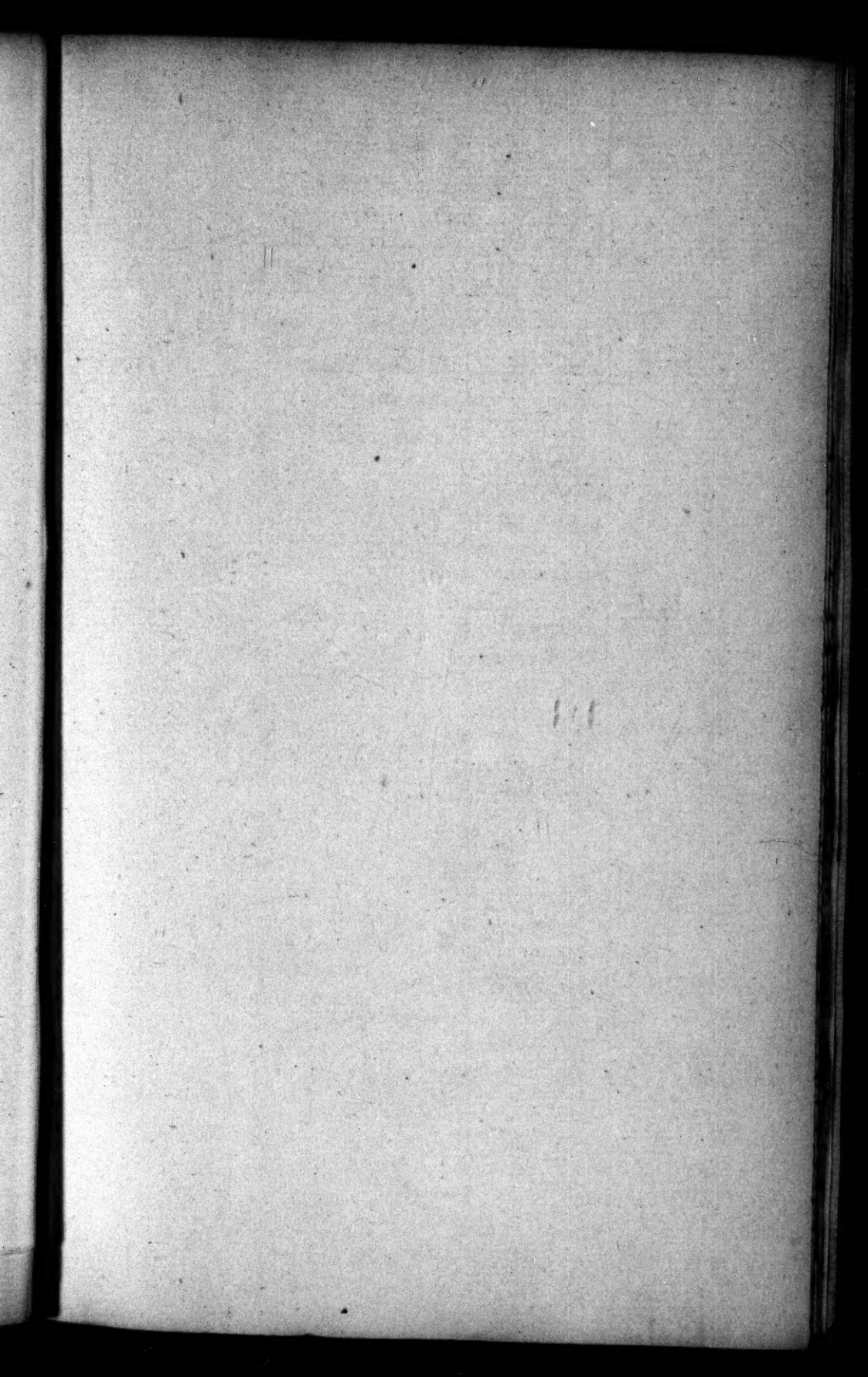
A. *Univalves*.

1. Patelliti.
1. Haliotiti.
3. Tubuliti f. Dentaliti.
4. Vermiculiti.
5. Orthoceratiti.
6. Nautiliti.
7. Ammoniti.
8. Heliciti.
9. Cochliti.
10. Nerititi.
11. Trochiliti.
12. Buccinit.
13. Strombiti.
14. Turbinit.
15. Volutiti.
16. Cylandriti.
17. Muriciti.
18. Purpuriti.
19. Globositi.
20. Porcellaniti.

B. *Bivalves*.

21. Ostreaciti.
22. Gryphiti.

23. Anomiæ.



23. Anomiae.
24. Chamiti.
25. Musculiti,
26. Pinniti.
27. Telliniti.
28. Soleniti,
29. Bucarditi.
30. Pectiniti.

C. Multivalves.

31. Pholaditi.
 32. Balaniti.
 33. Echiniti.
- Radioli
Lapides Judaici } Spines.

Impressions of Shells. *Conchyliotypolithi.*

Nuclei of Shells.

Mineralized Shells.

Shells unchanged: or, Fossil Shells, properly so called.

Calcined Shells.

Volcanic Shells.

Shell Sand.

Shell Marble.

4. *Entomolithi.* Fossil Insects Crustaceous.

1. Fossil Lobsters. *Astacolithi.*

2. Fossil Crabs. *Cancriti.*

Typolithi Insectorum. Impressions of Insects.

5. *Amphibiolithi.* Fossil Amphibia.

6. *Ichthyolithi.* Fossil Fish.

1. Fish entire.

2. Heads.

3. Fins.

4. Back-

4. Back-bones, or Vertebræ.
5. Teeth.
 - Glossopetræ.
 - Siliquastra.
 - Bufoniti.
 - Plectroniti.
6. Unicornu fossile.
7. Impressions of Fish. *Typolithi*.
7. *Ornitholithi*. Fossil Birds.
8. *Zoolithi*. Fossil Quadrupeds.
1. Bones.
2. Teeth.
9. *Anthropolithi*. Remains of Man.

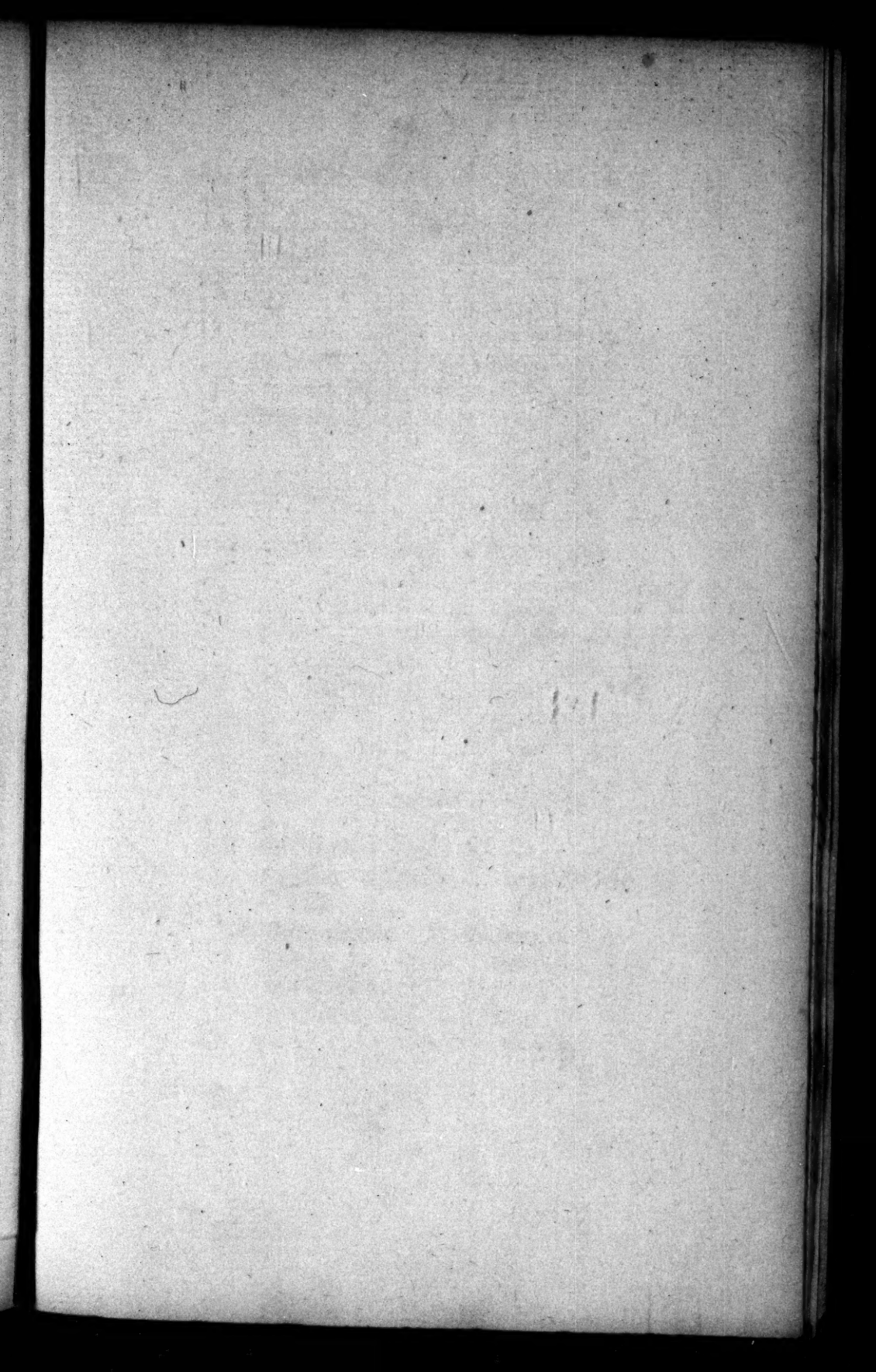
ORDER III. FIGURED STONES.

- A. *Lithomorphi Graptolithi*.
 1. Dendriti.
- B. *Lithoglyphi*.
- C. *Lithotomi*.
 1. *Ætiti*. Eagle Stones.
 - Geodes.
 - Enhydri.
 2. Varioliti.
 3. *Ollæ Gigantæ*.

ORDER IV. CALCULI.

1. *Margaritæ*. Pearls.
2. *Lapides Cancrorum*. Crab's eyes.
3. Serpent-stones. *Cobra de Cabelo*.
4. Bezoars.
5. *Hippolithi*. Horse Bezoars.
6. *Ægagropilæ*. Hair Balls.
7. *Calculi Humani*.





4. Back-bones, or Vertebræ.
5. Teeth.
 - Glossopetræ.
 - Siliquastra.
 - Bufoniti.
 - Plectroniti.
6. Unicornu fossile.
7. Impressions of Fish. *Typolithi*.
7. *Ornitholithi*. Fossil Birds.
8. *Zoolithi*. Fossil Quadrupeds.
1. Bones.
2. Teeth.
9. *Anthropolithi*. Remains of Man.

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- A. *Lithomorphi Graptolithi*.
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- B. *Lithoglyphi*.
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 3. Ollæ Gigantæ.

ORDER IV. CALCULI.

1. Margaritæ. Pearls.
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4. Bezoars.
5. Hippolithi. Horse Bezoars.
6. *Ægagropilæ*. Hair Balls.
7. Calculi Humani.



